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THE BIZARRE.

# NOTES QUERIES

A MONTHLY MAGAZINE OF

507-12

*HISTORY, FOLK-LORE, MATHEMATICS*  
*MYSTICISM, ART, SCIENCE, Etc.*

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“God perpetually geometrizes.” — *Plato.*

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VOLUME V.

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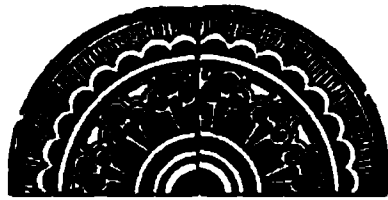
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1888.

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*Lingua, Tropus, Ratio, Num̃erus, Tonus, Angŭlus, Astra.*

Language, Rhetoric, Logic, Arithmetic, Music, Geometry, Astronomy.



## MELANGE, OLLA-PODRIDA, FLOTSAM AND JETSAM.



Astonishing Anthology from Attractive Authors.  
Broken Bits from Bulky Brains.  
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Yawnings and Yearnings for Youthful Yankees.  
Zeal and Zest from Zoroaster to Zimmerman.  
And so forth, &, Et Cætera, etc.

## PREFACE.



This volume, like its predecessors, requires a few general remarks by way of preface, and calls to our mind the words of Quintilian that "this business has more of labor in it than of show." So of a preface, the reader of a book expects a few words as to what the book contains, or why it is published. Hence we say that the subjects of the volume are of a great variety, more liberally extended than those limited to the seven liberal sciences. There is a cause for all things, but it is not always easy to give the reason for the effect, and rise and explain. However, we continue to ask questions, and never received the desired answers to all; so with many of our contributors. There is always a good supply in hand. Every questioner is especially interested in something of interest to himself, or herself.

What is earth, sexton ?	A place to dig graves.
What is earth, rich man ?	A place to work slaves.
What is earth, grey beard ?	A place to grow old.
What is earth, miser ?	A place to dig gold.
What is earth, school boy ?	A place for my play.
What is earth, maiden ?	A place to be gay.
What is earth, seamstress ?	A place where I weep.
What is earth, sluggard ?	A place for to sleep.
What is earth, soldier ?	A place for a battle.
What is earth, herdsman ?	A place to raise cattle.
What is earth, widow ?	A place of true sorrow.
What is earth, tradesman ?	I'll tell you tomorrow.
What is earth, sick man ?	'Tis nothing to me.
What is earth, sailor ?	My home is the sea.
What is earth, statesman ?	A place to win fame.
What is earth, author ?	I'll write there my name.
What is earth, monarch ?	For my realm 'tis given.
What is earth, Christian ?	The gateway of heaven.

*S. C. & L. M. Gould.*

MANCHESTER, N. H., December, 1888.

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## RECAPITULATION.

	No. Questions.	Answered.	Unanswered.
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Vol. II,	491	295	196
Vol. III,	151	106	45
Vol. IV,	185	117	68
Vol. V,	134	61	73
Total,	1483	908	575

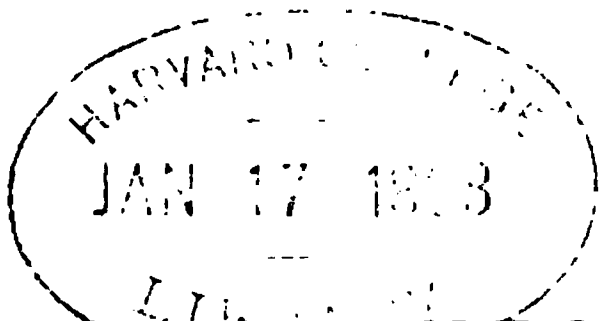
About 300 questions remain unanswered, as questions asked in the first volumes are answered in successive volumes. The 575 unanswered questions include the 25 asked in the December No. of this volume.

*1888.*

<b>457</b>	<b>485</b>	<b>483</b>	<b>463</b>
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<b>471</b>	<b>475</b>	<b>477</b>	<b>465</b>
<b>481</b>	<b>461</b>	<b>459</b>	<b>487</b>







## MISCELLANEOUS

## NOTES AND QUERIES,

WITH ANSWERS.

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*"Man is the first Dialogue that Nature held with God."*—GOETHE.

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VOL. V.

JANUARY, 1888.

No. 1.

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**JEW, HEBREW, OR ISRAELITE—THE DIFFERENCE.** (Vol. IV, p. 412.)

A *Jew* is a Judæan; formerly one of the tribe and then of the kingdom of Judah; and later an inhabitant of Judæa.

*Hebrew* is from the Hebrew word *Eber*, "over." The passover or *pascha* undoubtedly was a custom reminding the Abrahamids of their emigration, and the crossing of the Euphrates at Tiphseh or Thapsakos; and from that crossing they were called Hebrews or over-people. *Iberia* has the same meaning. Abraham is the first one called a Hebrew (Genesis xiv, 18.) The term, however, is never given to his reputed descendants, the Idumeians, Ishmaelites, Midianites, and Nabatheans of Arabia; and I suspect that they were Erythraians from India, or Semites of an anterior descent.

The *Israelites* were the reputed posterity of Jacob, surnamed Israel. In the Bible they are first described as the Abrahamids and Arabs that left Egypt and ruled in Palestine; but at the death of Saul the Judæans made David their king, and so their adherents were largely included under that name. I doubt the existence of "twelve" tribes. That is astrological. The Canon was established by the Makkabees about 200 B. C.; and the "historical books" were compiled or revised at that time. The evidence that the Patriarchs, Judges, and early kings were historical characters is very slight.

A. WILDER, M. D., Newark N. J.

## *Council of Nicæa (Nice) and the Biblical Canon.*

---

On page 372 of *NOTES AND QUERIES*, September, 1887, it is stated, "at the Council of Nicæa the canon of Scriptures was one of the chief objects of settlement, as to what books were to be received with authority, and what not." This is a mistake. In no trustworthy history of the first Nicene Council (A. D. 325), ancient or modern, can be found any reference to this council having in any manner had under consideration the canonicity of the scriptural writings. The extant accounts of the proceedings of the council, as given by eye-witnesses and members,—namely, Eusebius, Athanasius, Eustathius of Antioch, Auxano, a Novitian presbyter, and others with whom Jerome had conversed,—make no reference to any such action by the council.

The following are the only authentic sources of information concerning this council: Eusebius, "*De Vita Constantini*," III, 4-24, and "*Theod.*" I, 9; Socrates, "*Hist. Eccles.*," I 4-14; Sozomen, "*Hist. Eccles.*" I 15-28; Theodoret, "*Hist. Eccles.*" I 1-3; Philostorgius, "*Arian Fragments*"; Rufinus, "*Hist. Eccles.*" I 1-6, Ambrose, "*De Fide*;" "*Acta Concilii Nicæni*;" in Combefis' "*Novum Auctarium Biblioth. Patr.*," vol. II, p. 547; Gelasius Cyzicenus, "*Commentar de Synodo Nicæno*," I ib. III, in Hardouins; "*Concilorum Collectio*," vol. I, p. 345 *et seq.*; Maruthas, "*Lost History of Council of Nicæa*" (in Syriac), in Asseman, "*Biblioth. Orient*, I, pp. 177, 195; Renaudot, "*Hist. Patriarch, Alexandriner*," p. 69 *et seq.*; various treatises in the first volume of Athanasius's works, especially his "*Epistola de Nicænis Decretis*;" several passages in Eppiphanius, "*Contra Haereses*," lib. III, and Cowper's "*Analecta Nicæna*." All other narratives anent this council are based upon the foregoing, and contain nothing authentic not found in them. The British Museum contains a fragment of a Syrian manuscript concerning the Nicene Council written in A. D. 501. It furnishes a number of valuable data concerning this council not elsewhere accessible. Among other things it gives a list of all the decrees or canons of the council, but among them there is no canon concerning the authenticity of the Scriptures.

The sole foundation for the statement that this council took action relative to the selection of the canonical from the apocryphal books of

the Bible, is contained in a curious little manuscript, written by an unknown Greek author, certainly as late as the latter part of the ninth century, and perhaps later. This manuscript was brought from the Morea in the sixteenth century by Andreas Darmasius, and it was bought by Rev. John Pappus, a learned Lutheran Divine, who first published it in 1601, in Strasburg, in the original Greek, with a Latin version of his own. Its title in Greek was given as "Sunodikon Periechon en epitome hapasas apo ton hagion Apostolon gegonuias orthodoxous kai hairetikas sunodous." Its name in Latin was given by Pappus, as follows : "Libellus Synodicus, omnes synodus, tam orthodoxas quam haereticas ; brevi compendio continens quae ab Apostolorum inde tempore usque ad octavam." It contains an epitome of the proceedings of all the church councils, orthodox and heretical, from the time of the apostles down to the great eighth council of A. D. 869. It is published complete, both in Greek and Latin, under the title, "Synodicon Vetus," in Fabricius's "Bibliotheca Graeca." In the original Hamburg edition of Fabricius, in 14 quarto volumes, 1795-1828, the "Synodicon" can be found in volume XI, pp. 185-258 ; in Harles's revised edition, in 12 volumes, 1790-1809, it may be found in volume XII, pp. 360 *et seq.* It is also published entire in Voel and Justel's "Bibliotheca juris canon veteris," volume II, pp. 1166 *et seq.* ; and in Hardouin's "Conciliorum Collectio," volume V, pp. 1291 *et seq.* Mansi, in his great compilation, "Sacrorum conciliorum nova et amplissima collectio," 31 volumes, Florence, 1759, *et seq.*, included the "Libellus Synodicus" ; but he separated its various parts, distributing them throughout his work under the various councils to which they pertained,—that portion relating to the action of the Nicene Council upon the biblical canon being found in vol. II, p. 749.

"Synodicon Vetus" or "Libellus Synodicus" is a very inaccurate and unreliable little book. Various instances of its blunders, errors, and general untrustworthiness are indicated in C. J. Hefele's "History of the Christian Councils." See volume I, pp. 79, 80, 83, 84, 96, 125, 126, 223, English translation, Edinburgh, 1871.

In this obscure work, teeming with errors, written at a late date, written by whom, no one knows, is contained the first, last, and only mention of the Nicene council having decided upon the canonicity of the biblical books ; and in this account, as related in chapter xxxiv of the work, the decision is made, not by a vote of the council, but by



a miracle ! The following is the passage in the original Greek (Fabricius, "Bibl. Graece," original edition, XI, 198) :

"Tas on Diathekous biblous kai apokruphous, toide trope kata delous poiesasa. En gar to oiko ton Theon, kato para te theia trapeze autas parathemene proseuxato, hos eurethenai thas theopnoustous epano, ton kurion exaitusamene, kai tas kibdelous, ho kai gegonen, upokaiden."

The passage in the Latin version is as follows :

"Sacros etiam libros et apocryphos, hoc modo manifesto fecit. In domo enim Dei, inferiore loco juxta divinam nensam omnibus collocatis, Dominum invocans oravit : ut qui divinitus inspirati essent, superius ; qui autem adulterini, inferius (quod et factum est) invenirentur."

This may be rendered in English thus :

"The council made manifest the canonical and apocryphal books in the following manner : Placing them by the side of the divine table in the house of God, they prayed, entreating the Lord that the divinely inspired books might be found upon the table, and the spurious ones underneath ; and it so happened."

The manner in which this story has obtained so general a circulation in this century, is this : Robert Taylor, an antichristian polemic of the earlier portion of the century, quotes a part of the foregoing passage in his "Diegesis (a virulent onslaught upon the Christian religion), p. 432, American edition, preceding his quotation with the following : "Pappus, in his 'Synodicon,' to the council of Nice, asserts." This gave rise to the impression that Pappus himself was the author of the passage, instead of his being only the editor of the anonymous work in which it is found ; and from that day to this, Pappus has been named as the author of the statement, scarcely anybody having any idea who Pappus was or when he lived. From Taylor's "Diegesis" it passed into general literature, particularly that of the free-thinking or liberal school. I have seen it stated in a number of books, and in two cases the author has been given as the learned *Pappius*, instead of *Pappus*.

The narrative is merely one of the many legendary embellishments of the mediaeval ages, and is universally rejected by the world's scholarship as destitute of any historic foundation.

WM. EMMETTE COLEMAN, San Francisco, Cal.

"EITHER" AND "NEITHER." As the words "not either" have been contracted into *neither*, "not ever" into *never*, and "no one" into *none*, why should not the negative or privative, when followed by a vowel, be always contracted in the same way ? For example, *neven* for "not even," *nin* for "not in," and *nout* for "not out" ?

**THE LUNAR SOCIETY.** This society was an informal association of scientific men in Birmingham, Eng., which flourished between 1780 and 1801, and perhaps later. The society numbered only seven or eight members who dined together every month near the full moon, "in order," says Priestley, "to have the benefit of its light in returning home." Hence the name, "Lunar Society." The members were accustomed to meet for dinner at two o'clock and not to part until eight; they discussed current chemical and philosophical subjects. On one occasion they considered "whether or not heat is a compound of phlogiston and empyreal air"; also, "what light is made of and how to make it." The society was probably founded by James Watt and it embraced the following eminent men of science:

James Watt (1736-1819), the celebrated inventor of improvements in the steam engine, and one of the claimants for the discovery of the composition of water.

James Keir (17—1814), a chemist and author; also, proprietor of several chemical establishments at West Bromwich, near Birmingham.

Dr. William Withering (1741-1799), physician and chemist; discoverer of the constituents of the mineral witherite named in his honor.

Matthew Boulton (1728-1809), mechanical engineer, and partner of James Watt.

Dr. Erasmus Darwin (1731-1802), the distinguished naturalist, author of "The Botanic Garden," etc.

Samuel Galton, F. R. S., a wealthy man of letters.

Rev. R. A. Johuson, of Kenilworth.

Rev. Dr. Joseph Priestley (1733-1804), the noted theological writer, the discoverer of oxygen, and the father of pneumatic chemistry.

These gentlemen not unfrequently entertained guests at their philosophical banquets; among them were:

Josiah Wedgwood (1730-1795), the well-known potter and inventor of the ware known by his name.

Mr. Wilkinson, a connection by marriage of Dr. Priestley.

William Bewly, a surgeon and apothecary of Norfolk, author of letters on the chemistry of gases; a friend of Dr. Priestley.

H. CARRINGTON BOLTON, New York City.

"THE LOCOMOTIVE EMPEROR." (Vol. III, p. 171.) Adrian traveled incessantly, and hated to remain long in a place. He had a disagreeable wife, and was himself of an imperious temper and philosophical taste.

A. WILDER.

## QUESTIONS AND ANSWERS.

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SONGS OF A NATION. (Vol. III, p. 59.) The songs of a nation are contrasted with its laws. In Greek, *nomos* was first a song ; afterwards a *law*. The code of Drakô consisted of *thesmoi* — laws or ordinances of the gods ; the institutes of Solôn were *nomoi* ; so the saying, “ Give me the making of the songs of a nation and I care not who makes its laws,” relates to the popular rule as superseding the Eupatrid or higher-caste domination.

THE SHAMROCK. (Vol. III, p. 76.) The shamrock is the trefoil, or three-leaved *Oxalis*. It is the same as the device on cards called “ clubs,” and is also the equivalent of the cross. It is “ pagan ” to the core ; common alike to Ireland and Ceylon, and everywhere meaning the same—the triad God. The sacred fig is three-leaved, and therefore a symbol of life.

THE VATICAN. (Vol. III, p. 76.) Vatican is from *vates* a mantis or prophet-priest. It is a “ pagan ” word and belongs to paganism.

BAUGH-NAUGH-CLAUGH-PAUGH. I suspect that this long word is but a merry jest, and that *bonnyclabber* is all that is meant.

POMPEII. (Vol. III, p. 76.) Pompeii is a Greek name from *Pompaios*, a name of Hermes as the psychopompos or leader of souls from this world to the next, and of the procession of candidates for initiation, who were mystically dead. Herculaneum of course is from Hercules.

GYPSIES. (Vol. p. 76.) Gypsies were called *Bohemians* as having been supposed to have originated in Bohemia. Penny-a-liners and other writers having no permanent work or employment also are so called by analogy.

“ A ” in SANSKRIT WORDS. (Vol. III, p. 140.) The letter *a* preponderates in Sanskrit words because in the original there is no vowel, and yet a vowel sound is required. The Semitic dialects have the same peculiarity. A short *a* is adopted as nearest the genuine sound.

“ DJAFAR.” (Vol. III, 121.) Djafar, or Giafar, was immortalized in “ Arabian Nights Entertainments ” as the Virgin of Haran al Rasit the celebrated Khalif.

A. WILDER.

THE SUPPOSED "MATHEMATICAL FALLACY." (Vol. III, pp. 171, 198; IV, pp. 262, 399, 341.) Your two correspondents upon the supposed "mathematical fallacy" appear to be suffering from what the logicians call an "undistributed middle." Starting from the proposition that, if two quantities are equal, their square roots must also be equal, and disregarding the fact that every number has two different square roots, they proceed as though either square root of the first member of the equation must be equal to each square root of the second member. Hence the erroneous equations, Vol. III, pp 198, 262. When the proper signs are prefixed to the several values, the equations are true, otherwise they are not. In other words, we have, provided the correct signs are used,

$$\frac{\pm\sqrt{1}}{\pm\sqrt{-1}} = \frac{\pm\sqrt{-1}}{\pm\sqrt{1}}$$

in which the radical quantities are considered in their intrinsic values only, without regard to the ambiguity of signs. Now, if either the upper or the lower signs were used throughout, this would be another mode of writing  $+1 = -1$ , which is hardly demonstratable. But if we vary the algebraic signs in every possible way, we shall find that all the sixteen resulting equations, after being cleared from the fractional forms, are reducible to some one of the following four, each of which must be true :

$$\begin{aligned} (+\sqrt{-1})(+\sqrt{-1}) &= -1 \\ (-\sqrt{-1})(-\sqrt{-1}) &= -1 \\ (+\sqrt{-1})(-\sqrt{-1}) &= +1 \\ (-\sqrt{-1})(+\sqrt{-1}) &= +1 \end{aligned}$$

To omit the algebraic signs from the factors of the first members, and combine these signs into the form  $\pm 1$  in the second, is a looseness which naturally leads to an absurd result in just one half the cases. We may, however, generalize the form by writing

$$(\pm\sqrt{-1})(\pm\sqrt{-1}) = \mp 1$$

provided that the equation be accompanied by the statement, that the upper sign in the second member holds only when both the upper, or both the lower, signs are used in the first member ; but that the lower sign in the second represents the cases when the upper sign is used for one factor of the first member, and the lower sign of the other.

N. P. D.

*Table of the 271 Asteroids — 1801 to 1887.*

No.	NAME.	DATE OF DISCOVERY.	DISCOVERER.
1.	Ceres,	Jan. 1, 1801,	Piazzi <sub>1</sub> .
2.	Pallas,	Mar. 28, 1802,	Olbers <sub>1</sub> .
3.	Juno,	Sept. 1, 1804,	Harding <sub>1</sub> .
4.	Vesta,	Mar. 29, 1807,	Olbers <sub>2</sub> .
5.	Astræa,	Dec. 8, 1845,	Hencke <sub>1</sub> .
6.	Hebe,	July 1, 1847,	Hencke <sub>2</sub> .
7.	Iris,	Aug. 13,	Hind <sub>1</sub> .
8.	Flora,	Oct. 18,	Hind <sub>2</sub> .
9.	Metis,	April 25, 1848,	Graham <sub>1</sub> .
10.	Hygeia,	April 12, 1849,	De Gasparis <sub>1</sub> .
11.	Parthenope,	May 11, 1850,	De Gasparis <sub>2</sub> .
12.	Victoria,	Sept. 13,	Hind <sub>3</sub> .
13.	Egeria,	Nov. 2,	De Gasparis <sub>3</sub> .
14.	Irene,	May 19, 1851,	Hind <sub>4</sub> .
15.	Eunomia,	July 29,	De Gasparis <sub>4</sub> .
16.	Psyche,	Mar. 17, 1852,	De Gasparis <sub>5</sub> .
17.	Thetis,	April 17,	Luther <sub>1</sub> .
18.	Melpomene,	June 24,	Hind <sub>5</sub> .
19.	Fortuna,	Aug. 22,	Hind <sub>6</sub> .
20.	Massalia,	Sept. 19,	De Gasparis <sub>6</sub> .
21.	Lutetia,	Nov. 15,	Goldschmidt <sub>1</sub> .
22.	Calliope,	Nov. 16,	Hind <sub>7</sub> .
23.	Thalia,	Dec. 15,	Hind <sub>8</sub> .
24.	Themis.	April 5, 1853,	De Gasparis <sub>7</sub> .
25.	Phocæa,	April 6,	Chacornac <sub>1</sub> .
26.	Proserpina,	May 5,	Luther <sub>2</sub> .
27.	Euterpe,	Nov. 8,	Hind <sub>9</sub> .
28.	Bellona.	Mar. 1, 1854,	Luther <sub>3</sub> .
29.	Amphitrite,	Mar. 1,	Marth <sub>1</sub> .
30.	Urania,	July 22,	Hind <sub>10</sub> .
31.	Euphrosyne,	Sept. 1, •	Ferguson <sub>1</sub> .
32.	Pomona,	Oct. 26,	Goldschmidt <sub>2</sub> .
33.	Polyhymnia,	Oct. 28,	Chacornac <sub>2</sub> .
34.	Circe,	April 6, 1855,	Chacornac <sub>3</sub> .
35.	Leucothea,	April 19,	Luther <sub>4</sub> .
36.	Atalanta,	Oct. 5,	Goldschmidt <sub>3</sub> .
37.	Fides,	Oct. 5,	Luther <sub>5</sub> .
38.	Leda,	Jan. 12, 1856,	Chacornac <sub>4</sub> .
39.	Lætitia,	Feb. 8,	Chacornac <sub>5</sub> .
40.	Harmonia,	Mar. 31,	Goldschmidt <sub>4</sub> .
41.	Daphne,	May 22,	Goldschmidt <sub>5</sub> .
42.	Isis,	May 23,	Pogson <sub>1</sub> .

43.	Ariadne,	April 5,	1856,	Pogson <sub>2</sub> .
44.	Nysa,	May 27,		Goldschmidt <sub>6</sub> .
45.	Eugenia,	June 27,		Goldschmidt <sub>7</sub> .
46.	Hestia,	Aug. 16,		Pogson <sub>8</sub> .
47.	Melete,	Sept. 9,		Goldschmidt <sub>8</sub> .
48.	Aglaia,	Sept. 15,		Luther <sub>6</sub> .
49.	Doris,	Sept. 19,		Goldschmidt <sub>9</sub> .
50.	Pales,	Sept. 19,		Goldschmidt <sub>10</sub> .
51.	Virginia,	Oct. 4,		Ferguson <sub>2</sub> .
52.	Nemausa,	Jan. 22,	1858,	Laurent <sub>1</sub> .
53.	Europa,	Feb. 4,		Goldschmidt <sub>11</sub> .
54.	Calypso,	April 4,		Luther <sub>7</sub> .
55.	Alexandra,	Sept. 10,		Goldschmidt <sub>12</sub> .
56.	Pandora,	Sept. 10,		Searle <sub>1</sub> .
57.	Mnemosyne,	Sept. 22,	1859,	Luther <sub>8</sub> .
58.	Concordia,	Mar. 24,	1860,	Luther <sub>9</sub> .
59.	Elpis,	Sept. 9,		Chacornac <sub>6</sub> .
60.	Danaë,	Sept. 12,		Goldschmidt <sub>13</sub> .
61.	Echo,	Sept. 14,		Ferguson <sub>8</sub> .
62.	Erato,	Sept. 14,		Fœrster <sub>1</sub> .
63.	Ausonia,	Feb. 10,	1861,	De Gasparis <sub>9</sub> .
64.	Angelina,	Mar. 4,		Tempel <sub>1</sub> .
65.	Cybele,	Mar. 8,		Tempel <sub>2</sub> .
66.	Maia,	April 9,		Tuttle <sub>1</sub> .
67.	Asia,	April 17,		Pogson <sub>5</sub> .
68.	Leto,	April 29,		Luther <sub>10</sub> .
69.	Hesperia,	April 29,		Schiaparelli <sub>1</sub> .
70.	Panopæa,	May 5,		Goldschmidt <sub>14</sub> .
71.	Niobe,	Aug. 13,		Luther <sub>11</sub> .
72.	Feronia,	May 29,		C. H. F. Peters <sub>1</sub> .
73.	Clytie,	April 7,	1862,	Tuttle <sub>2</sub> .
74.	Galatea,	Aug. 29,		Tempel <sub>8</sub> .
75.	Eurydice,	Sept. 22,		Peters <sub>2</sub> .
86.	Freia,	Oct. 21,		D'Arrest <sub>1</sub> .
77.	Frigga,	Nov. 12,		Peters <sub>8</sub> .
78.	Diana,	Mar. 15,	1863,	Luther <sub>12</sub> .
79.	Eurynome,	Sept. 14,		Watson <sub>1</sub> .
80.	Sappho,	May. 2,	1864,	Pogson <sub>5</sub> .
81.	Terpsichore,	Sept. 30,		Tempel <sub>4</sub> .
81.	Alcmene,	Nov. 27,		Luther <sub>13</sub> .
83.	Beatrice,	April 26,	1865,	De Gasparis <sub>9</sub> .
84.	Clio,	Aug. 25,		Luther <sub>14</sub> .
85.	Io,	Sept. 19,		Peters <sub>4</sub> .
86.	Semele,	Jan. 4,	1866,	Tietjen <sub>1</sub> .
87.	Sylvia,	May 16,		Pogson <sub>6</sub> .
88.	Thisbe,	June 15,		Peters <sub>5</sub> .

89.	Julia,	Aug. 6,	1866,	Stephan <sub>1</sub> .
90.	Antiope,	Oct. 1,		Luther <sub>15</sub> .
91.	Ægina,	Nov. 4,		Borrelly <sub>1</sub> .
92.	Undina,	July 7,	1867,	Peters <sub>6</sub> .
93.	Minerva,	Aug. 24,		Watson <sub>2</sub> .
94.	Aurora,	Sept. 6,		Watson <sub>8</sub> .
95.	Arethusa,	Nov. 23,		Luther <sub>16</sub> .
96.	Ægle,	Feb. 17,	1868,	Coggia <sub>1</sub> .
97.	Clotho,	Feb. 17,		Tempel <sub>5</sub> .
98.	Ianthe,	April 18,		Peters <sub>7</sub> .
99.	Dike,	May 28,		Borrelly <sub>2</sub> .
100.	Hecate,	July 11,		Watson <sub>4</sub> .
101.	Helena,	Aug. 15,		Watson <sub>5</sub> .
102.	Miriam,	Aug. 22,		Peters <sub>8</sub> .
103.	Hera,	Sept. 7,		Watson <sub>6</sub> .
104.	Clymene,	Sept. 13,		Watson <sub>7</sub> .
105.	Artemis,	Sept. 16,		Watson <sub>8</sub> .
106.	Dione,	Oct. 10,		Watson <sub>9</sub> .
107.	Damilla,	Nov. 17,		Pogson <sub>7</sub> .
108.	Hecuba,	April 2,	1869,	Luther <sub>17</sub> .
109.	Felicitas,	Oct. 9,		Peters <sub>9</sub> .
110.	Lydia,	April 19,	1870,	Borrelly <sub>8</sub> .
111.	Ate,	Aug. 14,		Peters <sub>10</sub> .
112.	Iphigenia,	Sept. 19,		Peters <sub>11</sub> .
113.	Amalthea,	Mar. 12,	1871,	Luther <sub>18</sub> .
114.	Cassandra,	July 23,		Peters <sub>12</sub> .
115.	Thyra,	Aug. 6,		Watson <sub>10</sub> .
116.	Sirona,	Sept. 8,		Peters <sub>18</sub> .
117.	Lomia,	Sept. 12,		Borrelly <sub>4</sub> .
118.	Peitho,	Mar. 15,	1872,	Luther <sub>19</sub> .
119.	Althæa,	April 3,		Watson <sub>11</sub> .
120.	Lachesis,	April 10,		Borrelly <sub>5</sub> .
121.	Hermione,	May 12,		Watson <sub>12</sub> .
122.	Gerda,	July 31,		Peters <sub>14</sub> .
123.	Brunhilda,	July 31,		Peters <sub>15</sub> .
124.	Alceste.	Aug. 23,		Peters <sub>16</sub> .
125.	Liberatrix,	Sept. 11,		Prosper Henry <sub>1</sub> .
126.	Velleda,	Nov. 5,		Paul Henry <sub>1</sub> .
127.	Johanna,	Nov. 5,		Prosper Henry <sub>2</sub> .
128.	Nemesis,	Nov. 25,		Watson <sub>12</sub> .
129.	Antigone,	Feb. 5,	1873,	Peters <sub>17</sub> .
130.	Electra,	Feb. 17,		Peters <sub>18</sub> .
131.	Vala,	May 24,		Peters <sub>19</sub> .
132.	Æthra,	June 13,		Watson <sub>14</sub> .
133.	Cyrene,	Aug. 16,		Watson <sub>15</sub> .

134.	Sophrosyne,	Sept. 27,	1873,	Luther <sub>20</sub> .
125.	Hertha,	Feb. 18,	1874,	Peters <sub>20</sub> .
136.	Austria,	Mar. 18,		Palisa <sub>1</sub> .
137.	Melibœa,	April 21,		Palisa <sub>2</sub> .
138.	Tolosa,	May 19,		Perrotin <sub>1</sub> .
139.	Juewa,	Oct. 10,		Watson <sub>16</sub> .
140.	Siwa,	Oct. 13,		Palisa <sub>3</sub> .
141.	Lumen,	Jan. 13,	1875,	Paul Henry <sub>2</sub> .
142.	Polana,	Jan. 28,		Palisa <sub>4</sub> .
143.	Adria,	Eeb. 23,		Palisa <sub>5</sub> .
144.	Vibilia,	June 3,		Peters <sub>21</sub> .
145.	Adeona,	June 3,		Peters <sub>22</sub> .
146.	Lucina,	June 8,		Borrelly <sub>6</sub> .
147.	Protopenia,	July 10,		Schulhof <sub>1</sub> .
148.	Gallia,	Aug. 7,		Prosper Henry <sub>8</sub> .
149.	Medusa,	Sept. 21,		Perrotin <sub>2</sub> .
150.	Nuwa,	Oct. 18,		Watson <sub>17</sub> .
151.	Abundantia,	Nov. 1,		Palisa <sub>6</sub> .
152.	Atala,	Nov. 2,		Paul Henry <sub>8</sub> .
153.	Hilda,	Nov. 2,		Palisa <sub>7</sub> .
154.	Bertha,	Nov. 4,		Prosper Henry <sub>4</sub> .
155.	Scylla,	Nov. 8,		Palisa <sub>8</sub> .
156.	Xauthippe,	Nov. 22,		Palisa <sub>9</sub> .
157.	Dejanira,	Dec. 1,		Borrelly <sub>7</sub> .
158.	Coronis,	Jan. 4,	1876,	Knorre <sub>1</sub> .
159.	Æmilia,	Jan. 26,		Paul Henry <sub>4</sub> .
160.	Una,	Feb. 20,		Peters <sub>23</sub> .
161.	Athor,	April 19,		Watson <sub>18</sub> .
162.	Laurentia.	April 21,		Prosper Henry <sub>8</sub> .
163.	Erigone,	April 26,		Perrotin <sub>8</sub> .
164.	Eva,	July 12,		Paul Henry <sub>8</sub> .
165.	Loreley,	Aug. 9,		Peters <sub>24</sub> .
166.	Rhodope,	Aug. 15,		Peters <sub>25</sub> .
167.	Urda,	Aug. 28,		Peters <sub>26</sub> .
168.	Sibylla,	Sept. 28,		Watson <sub>19</sub> .
169.	Zelia,	Sept. 28,		Prosper Henry <sub>6</sub> .
170.	Maria,	Jan. 10,	1877,	Perrotin <sub>4</sub> .
171.	Ophelia,	Jan. 13,		Borrelly <sub>8</sub> .
172.	Baucis,	Feb. 5,		Borrelly <sub>9</sub> .
173.	Ino,	Aug. 1,		Borrelly <sub>10</sub> .
174.	Phædra,	Sept. 2,		Watson <sub>20</sub> .
175.	Andromache,	Oct. 1,		Watson <sub>21</sub> .
176.	Idunna,	Oct. 14,		Peters <sub>27</sub> .
177.	Irma,	Nov. 5,		Paul Henry <sub>6</sub> .
178.	Belisana,	Nov. 6,		Palisa <sub>10</sub> .
179.	Clytemnestra,	Nov. 11,		Watson <sub>22</sub> .



180.	Garumna,	Jan. 29,	1878,	Perrotin <sub>5</sub> .
181.	Eucharis,	Feb. 2,		Cottenot <sub>1</sub> .
182.	Elsa,	Feb. 7,		Palisa <sub>11</sub> .
183.	Istra,	Feb. 8,		Palisa <sub>12</sub> .
184.	Deiopeia,	Feb. 28,		Palisa <sub>18</sub> .
185.	Eunike,	Mar. 1,		Peters <sub>28</sub> .
186.	Celuta,	April 6,		Prosper Henry <sub>7</sub> .
187.	Lamberta,	April 11,		Coggia <sub>2</sub> .
188.	Menippe,	June 18,		Peters <sub>29</sub> .
189.	Phthia,	Sept. 9,		Peters <sub>30</sub> .
190.	Ismene,	Sept. 22,		Peters <sub>31</sub> .
191.	Kolga,	Sept. 30,		Peters <sub>32</sub> .
192.	Nausicaä,	Feb. 17,	1819,	Palisa <sub>14</sub> .
193.	Ambrosia,	Feb. 28,		Coggia <sub>3</sub> .
194.	Prokne,	Mar. 21,		Peters <sub>33</sub> .
195.	Eurykleia,	April 19,		Palisa <sub>15</sub> .
196.	Philomela,	May 14,		Peters <sub>34</sub> .
197.	Arete,	May 21,		Palisa <sub>16</sub> .
198.	Ampella,	June 13,		Borrelly <sub>12</sub> .
199.	Byblis,	Suly 9,		Peters <sub>35</sub> .
200.	Dynamene,	July 27,		Peters <sub>36</sub> .
201.	Penelope,	Aug. 7,		Palisa <sub>17</sub> .
202.	Chryseïs,	Sept. 11,		Peters <sub>37</sub> .
203.	Pompeia,	Sept. 25,		Peters <sub>38</sub> .
204.	Callisto,	Oct. 8,		Palisa <sub>18</sub> .
205.	Martha,	Oct. 13,		Palisa <sub>19</sub> .
206.	Hersilia,	Oct. 13,		Peters <sub>39</sub> .
207.	Hedda,	Oct. 27,		Palisa <sub>20</sub> .
208.	Lacrimosa,	Oct. 21,		Palisa <sub>21</sub> .
209.	Dido,	Oct. 22,		Peters <sub>40</sub> .
210.	Isabella,	Nov. 12,		Palisa <sub>22</sub> .
111.	Isolda,	Dec. 10,		Palisa <sub>23</sub> .
212.	Medea,	Feb. 6,	1880,	Palisa <sub>24</sub> .
213.	Lilæa,	Feb. 16,		Peters <sub>41</sub> .
214.	Aschera.	Feb. 29,		Palisa <sub>25</sub> .
215.	Oenome,	April 7,		Knorre <sub>3</sub> .
216.	Cleopatra,	April 10,		Palisa <sub>26</sub> .
217.	Eudora,	Aug. 30,		Coggia <sub>4</sub> .
218.	Bianca,	Sept. 4,		Palisa <sub>27</sub> .
219.	Thusnelda,	Sept. 28,		Palisa <sub>28</sub> .
220.	Stephania,	Feb. 23,	1881,	Palisa <sub>29</sub> .
221.	Eos,	Jan. 18,	1882,	Palisa <sub>30</sub> .
222.	Lucia,	Feb. 9,		Palisa <sub>31</sub> .
223.	Rosa.	Mar. 9,		Palisa <sub>32</sub> .
224.	Oceana.	Mar. 30,		Palisa <sub>33</sub> .
225.	Henrietta,	April 19,		Palisa <sub>34</sub> .

226.	Weringia,	July 19, 1882,	Palisa <sub>35</sub> .
227.	Philosophia,	Aug. 12,	Paul Henry <sub>7</sub> .
228.	Agathe,	Aug. 19,	Palisa <sub>36</sub> .
229.	Adelinda,	Aug. 22,	Palisa <sub>37</sub> .
230.	Athamantis,	Sept. 3,	DeBall <sub>1</sub> .
231.	Vindobona,	Sept. 10,	Palisa <sub>38</sub> .
232.	Russia,	Jan. 31, 1883,	Palisa <sub>39</sub> .
233.	Asterope,	May 11,	Borrelly <sub>12</sub> .
234.	Barbara,	Aug. 12,	Peters <sub>42</sub> .
235.	Carolina,	Nov. 28,	Palisa <sub>40</sub> .
236.	Honorina,	April 26, 1884,	Palisa <sub>41</sub> .
237.	Cœlestina,	June 27,	Palisa <sub>42</sub> .
238.	Hypatia,	July 1,	Knorre <sub>8</sub> .
239.	Adrastea,	Aug. 18,	Palisa <sub>43</sub> .
240.	Vanadis,	Aug. 27,	Borrelly <sub>13</sub> .
241.	Germania,	Sept. 12,	Luther <sub>21</sub> .
242.	Kriemhilda,	Sept. 22,	Palisa <sub>44</sub> .
243.	Ida,	Sept. 29,	Palisa <sub>45</sub> .
244.	Sita,	Oct. 14,	Palisa <sub>46</sub> .
245.	Vera,	Feb. 6,	Pogson <sub>8</sub> .
246.	Asporina,	Mar. 6,	Borrelly <sub>14</sub> .
247.	Eukrate,	Mar. 14,	Luther <sub>22</sub> .
248.	Lameia,	June 5,	Palisa <sub>47</sub> .
249.	Ilse,	Aug. 16,	Peters <sub>48</sub> .
250.	Bettina,	Sept. 3,	Palisa <sub>48</sub> .
251.	Sophia,	Oct. 4,	Palisa <sub>49</sub> .
252.	Clementina,	Oct. 11,	Perrotin <sub>6</sub> .
253.	Matilda,	Nov. 12,	Palisa <sub>50</sub> .
254.	Augusta,	Mar. 31, 1886,	Palisa <sub>51</sub> .
255.	Oppavia,	Apr. 2,	Palisa <sub>52</sub> .
256.	Walpurga,	Apr. 3,	Palisa <sub>53</sub> .
257.	Silesia,	Apr. 5,	Palisa <sub>54</sub> .
258.	Tyche,	May 7,	Luther <sub>23</sub> .
259.	Aletheia,	June 28,	Peters <sub>44</sub> .
260.	Huberta,	Oct. 3,	Palisa <sub>55</sub> .
261.	Prymno,	Oct. 31,	Peters <sub>45</sub> .
262.	Valda,	Nov. 3,	Palisa <sub>56</sub> .
263.	Dresda,	Nov. 3,	Palisa <sub>57</sub> .
264.	Libussa,	Dec. 22,	Peters <sub>46</sub> .
265.	Anna,	Feb. 25, 1887,	Palisa <sub>58</sub> .
266.	Aline	May 17,	Palisa <sub>59</sub> .
267.	Tirza,	May 27,	Charlois <sub>1</sub> .
268.	Adorea,	June 11,	Borrelly <sub>15</sub> .
269.		Sept. 21,	Palisa <sub>60</sub> .
270.	Anahita,	Oct. 8,	Peters <sub>47</sub> .
271.		Oct. 16,	Knorre <sub>4</sub> .

OBSERVATIONS ON THE ASTEROIDS. A call for a complete list of the Asteroids has waited for nearly a year.

The discovery of these planetoids have been numerous in later years.

The subscript figures immediately following the discoverers' names indicate the number each discovered successively.

The number discovered in each decade are as follows :

1801 to 1850 inclusive (first fifty years)	13
1851 to 1860 - - - -	49
1861 to 1870 - - - -	50
1871 to 1880 - - - -	107
1881 to 1887 - - - -	52
Total,	271

Dr. Palisa, of Europe, leads in the list — he having discovered 60 ; while Dr. Peters, of America, follows, as second in the list, with 47 ; these two together having discovered more than one-third of the 271.

Of the 271 Asteroids thus far known, 77 were discovered by American astronomers, and 196 by European astronomers.

*Names.* No. 47 (Melete) was first named *Pseudo-Daphne* ("false-Daphne) by its discoverer, Goldschmidt, because when he discovered No. 41 (Daphne), he soon after lost it ; and in searching for it later, he discovered No. 47 (Melete) and in turn lost this also, and not until August 27, 1861, did he re-discover Melete or "Pseudo-Daphne."

Nos. 49 and 50 (Doris and Pales) were called the "twin planets," because Goldschmidt discovered them at the same time, Sept. 19, 1857.

No. 59 (Elpis) was first called "Olympia," but afterwards named Elpis.

No. 65 (Cybele) was first called "Maximiliana," but of late years it has been called Cybele.

The Nine Muses have been immortalized by their names :

No. 18. Melpomene, Hind <sub>8</sub> .	No. 33. Polyhymnia, Chacornac <sub>2</sub> .
No. 22. Calliope, Hind <sub>6</sub> .	No. 62. Erato, Fœrster <sub>11</sub> .
No. 23. Thalia, Hind <sub>7</sub> .	No. 81. Terpsichore, Tempel <sub>4</sub> .
No. 27. Euterpe, Hind <sub>8</sub> .	No. 84. Clio, Luther <sub>14</sub> .
No. 30. Urania, Hind <sub>9</sub> .	

Prof. Hind evidently intended to continue with the names of the last three Muses had not No. 30 (Urania) been his 8th and last dis-

covery of an Asteroid. Hence the names were completed as given.

The names of the Three Graces appear: No. 23 (Thalia), No. 31, (Euphrosynê), and No. 48 (Aglaïa). While the names of only two of the Three Fates appear: No. 97 (Clôthô), and No. 120 (Lachesis); the other Fate is Atropos.

Several countries have been immortalized: No. 53 (Europa), No. 97 (Asia), No. 136 (Austria), No. 232 (Russia), and 241 (Germania).

FIRST MENTION OF ICE-CREAM. The first mention of ice-cream that is found in our history is in the account of the festivities following Washington's first inauguration as president, in the city of New York, in 1789. Among the ices used on that occasion was ice-cream, which is said to have been prepared, or at least suggested, by Dolly Adams, then the brightest star in social and diplomatic circles. The new confection made quite a sensation at that time, and probably helped to increase Dolly Adams's popularity.—*Pittsburgh Dispatch*.

THE MOTIVE POWER OF THE WORLD. Four fifths of the engines now working in the world have been constructed during the last twenty-five years. France owns 47,590 stationary or locomotive boilers, 7,000 locomotives, and 1,850 boilers of boats; Germany has 10,000 locomotives, 59,000 boilers, and 1,700 ships' boilers; Austria has 12,000 boilers, and 2,800 locomotives.

The force equivalent to the working power steam engines represent: in the United States, 7,500,000-horse power; in England, 7,000,000-horse power; in France, 3,000,000-horse power; in Austria, 1,500,000-horse power; and in Germany, 4,500,000-horse power. In these figures the motive power of the locomotives is not included, whose number in all the world amounts to 105,000, representing a total of 3,000,000-horse power. Adding this amount to the other powers, we obtain a grand total of 46,000,000-horse power.

A steam horse power is equal to three actual horses' power; and a living horse is equal to seven men. The steam engines of the world represent, therefore, approximately the work of 1,000,000,000 men, or more than double the working population of the earth, whose total population amounts to 1,455,923,000 inhabitants. Steam has accordingly trebled man's working power, enabling him to economize his physical strength, while attending to his intellectual development. — *London Times*.

MAIDEN—ATHENS. (Vol. IV, p. 442.) *Apropos* I send you a prolific word—*Athens*—to go with the word "Maiden." The sentence was formed many years ago. "Nat. Heath's Seth has ten hens; he set a hen at the east sea; she ate ants as she sat 'neath the ants' nest; he then set a hat, a neat net, 'neath the nest; the hens then ate the ants at the sea."

SETH HEATH.

Q U E S T I O N S .

1. Lord Francis Bacon is quoted as saying that "small-pox and ague are minor evils compared with the plague." Where in his works does he say it? E. B., Washington, D. C.

2. Is the decimal coinage a "Yankee notion"? Canada introduced it from the United States in 1858. Where did the United States get it, and when? THOS. BENGOUGH, Toronto, Can.

3. Where, when, and how originated the "three days of grace" on promissory notes and bills of draft? THOS. BENGOUGH.

4. Can any one inform me who was *Dick*, and what was the peculiarity of his *hat-band*, in the saying, "Odd as Dick's hat-band." DJAFAR.

5. Can any of your readers inform me as to the authorship of the following lines? They have been much used to soothe the restless, seeking sleep. DJAFAR.

"Sleep sweetly in this quiet room,  
O thou, who'er thou art,  
And let no mournful yesterdays  
Disturb thy peaceful heart.  
Nor let tomorrow scare thy rest,  
With dreams of coming ill;  
Thy Maker is thy changeless friend,  
His love surrounds thee still.  
Forget thyself and all the world,  
Put out each glaring light;  
The stars are watching overhead,  
Sleep sweetly, thou, good night!"

6. Why are "sixty-three gallons" called a *hogshead* (hog's head)? A. L. G., Manchester, N. H.

7. The "New Astronomy," by P. E. Trastour, M. D., page 60, says "that whitish glimmer of irregular form which makes the turn of our heavens, is known by the name of milky way, and more generally by the popular name of Saint James' Way." Why so called, and what *Saint James* is referred to? CHARLES CABOT.

8. Which of the two apostles named James was the author of the Epistle that bears that name, James, brother of John, son of Zebedee; or James, son of Alphaeus? ANDREW SMITH.

9. What was the real names by which Jesus (the Christ) was called by the Hebrews, the Greeks, and the Romans? for we are told that Pilate wrote the title "in Hebrew, *and* Greek, *and* Latin."—(John XIX, 20). ANDREW SMITH.

10. In the constellation Orion are three stars generally known as "the Belt of Orion"; also, known by the name of the *Three Kings*. What three kings are alluded to? ANDREW SMITH.

11. Why does fanning a person in a hot day cool the person? Also, why does blowing into hot tea or coffee cool it? W. B.

12. Who is the author of this quotation: "In the house of mourning lay the casket robbed of its adorning."

J. FRANCIS RUGGLES, Bronson, Mich.

*Simultaneous Equations.*

By B. F. BURLERSON, Oneida Castle, N. Y.

In such equations the unknown quantities are similarly involved. The method given for the elimination and resolution of such equations is imperfectly treated in our text-books as regards its adaptability to the resolution of a great class of problems in algebra, geometry, and trigonometry. We beg permission to show in a fuller manner its application and usefulness.

It is well known that if  $s$  = the sum of any number of quantities,  $m$  = the sum of their products taken two and two,  $n$  = the sum of their products taken three and three,  $p$  = the sum of their products taken four and four,  $r$  = the sum of their products taken five and five, etc., etc.; then the quantities themselves will be the roots of the general equation,

$$X^m - sX^{m-1} + mX^{m-2} - nX^{m-3} + pX^{m-4} - \dots \pm r = 0$$

We will now give some formulæ involving the utility of this principle. We take it for granted that the reader is acquainted with the notation of the triangle, now almost universally adopted by mathematicians. In the books  $s$  = the semi-perimeter of the triangle; we put it equal to the whole of the perimeter, which we consider more systematic. No other changes in notation have been made.

1.  $a^2 + b^2 + c^2 = s^2 - 2m.$
2.  $a^3 + b^3 + c^3 = s^3 - 3sm + 3n.$
3.  $a^4 + b^4 + c^4 = s^4 - 4s^2m + 4sn + 2m^2.$
4.  $a^5 + b^5 + c^5 = s^5 - 5s^3m + 5s^2n + 5sm^2 - 5mn.$
5.  $a^6 + b^6 + c^6 = s^6 - 6s^4m + 6s^3n + 9s^2m^2 - 12smn + 3n^2 - 2m^3.$
6.  $a^7 + b^7 + c^7 = s^7 - 7s^5m + 7s^4n + 14s^3m^2 - 21s^2mn + 7sn^2 - 7sm^3 + 7m^2n.$
7.  $a^8 + b^8 + c^8 = s^8 - 8s^6m + 8s^5n + 20s^4m^2 - 32s^3mn + 12s^2n^2 - 16s^2m^3 + 24sm^2n - 8mn^2 + 2m^4.$
8.  $a^2 + b^2 + c^2 + d^2 = (1)$
9.  $a^3 + b^3 + c^3 + d^3 = (2)$
10.  $a^4 + b^4 + c^4 + d^4 = s^4 - 4s^2m + 4sn + 2m^2 - 4p.$
11.  $a^5 + b^5 + c^5 + d^5 = s^5 - 5s^3m + 5s^2n + 5sm^2 - 5mn - 5sp.$
12.  $a^2 + b^2 + c^2 + d^2 + e^2 = (1) = (8).$
13.  $a^3 + b^3 + c^3 + d^3 + e^3 = (2) = (9).$

14.  $a^4 + b^4 + c^4 + d^4 + e^4 = (10).$
15.  $a^5 + b^5 + c^5 + d^5 + e^5 = s^5 - 5s^3m + 5s^2n + 5sm^2 - 5mn - 5sp + 5r.$
16.  $a^2b^2 + a^2c^2 + b^2c^2 = m^2 - 2sn.$
17.  $a^3b^3 + a^3c^3 + b^3c^3 = m^3 - 3smn + 3n^2.$
18.  $a^4b^4 + a^4c^4 + b^4c^4 = m^4 - 4sm^2n + 4mn^2 + 2s^2n^2.$
19.  $a^2b + b^2c + a^2c + ab^2 + bc^2 + ac^2 = sm - 3n.$
20.  $k = \frac{1}{4}\sqrt{(4s^2m - s^4 - 8sn)}.$
21.  $t = [\text{an auxiliary quantity}] = \sqrt{(4s^2m - s^4 - 8sn)}.$
22.  $R = n \div t. \quad (23). \quad r = t \div 2s.$
23.  $R_1 [\text{the radius of the nine-point circle}] = n \div 2t.$
24.  $R + R_1 + r = (t^2 + 3ns) \div 2st.$
25.  $RR_1 + R_1r + Rr = (3nt^2 + 2n^2s) \div 4st^2.$
26.  $RR_1r = n^2 \div 4st.$
27.  $r_a + r_b + r_c = (4sm - s^3) \div 2t.$
28.  $r_ar_b + r_ar_c + r_br_c = \frac{1}{4}s^2.$
29.  $r_ar_br_c = \frac{1}{8}st.$
30.  $P_a + P_b + P_c = mt \div 2n.$
31.  $P_a^2 + P_b^2 + P_c^2 = t^2(m^2 - 2sn) \div 4n^2.$
32.  $P_aP_b + P_aP_c + P_bP_c = (4s^3 - s^5 - 8s^2n) \div 4n.$
33.  $P_aP_bP_c = t \div 8n.$
34.  $m_a + m_b + m_c = (3s^2 - 6m) \div 4.$
35.  $m_am_b + m_am_c + m_bm_c = (9m^2 - 18sn) \div 16.$
36.  $m_a^2 + m_b^2 + m_c^2 = (9s^4 - 36s^2m + 36sn + 18m^2) \div 16.$
37.  $m_am_bm_c = \sqrt{(-4s^6 + 24s^4m - 30s^2m^2 - 4m^3 - 36s^3n + 72smn - 27n^3)} \div 8.$
38.  $l_al_bl_c = \sqrt{(4s^4mn^2 - s^6n^2 - 8s^3n^3)} \div \sqrt{(s^2m^2 - 2smn + n^2)}.$
39.  $\sin A + \sin B + \sin C = st \div 2n.$
40.  $\cos A + \cos B + \cos C = (2sn + t^2) \div 2sn.$
41.  $\sin A \sin B \sin C = t^3 \div 8n^2.$
42.  $\cos A \cos B \cos C = (s^3t^2 - 8snt - 2t^3) \div 16sn^2.$
43.  $\cos \frac{1}{2}A \cos \frac{1}{2}B \cos \frac{1}{2}C = st \div 8n.$
44.  $\sin \frac{1}{2}A \sin \frac{1}{2}B \sin \frac{1}{2}C = t^2 \div 8sn.$
45.  $\sin^2 \frac{1}{2}A + \sin^2 \frac{1}{2}B + \sin^2 \frac{1}{2}C = (4sn - t^2) \div 4sn.$
46.  $\cos^2 \frac{1}{2}A + \cos^2 \frac{1}{2}B + \cos^2 \frac{1}{2}C = (8sn + t^2) \div 4sn.$
47.  $\sin^2 A + \sin^2 B + \sin^2 C = (s^4t^2 - 8snt^2 - t^4) \div 8s^2n^2.$
48.  $\cos^2 A + \cos^2 B + \cos^2 C = (8sn^2 - s^3t^2 + 8snt + 2t^3) \div 8sn^2.$
49.  $\sin 2A + \sin 2B + \sin 2C = t^3 \div 2n^2.$
50.  $\cos 2A + \cos 2B + \cos 2C = (8snt + 2t^3 - s^3t^2 - 4sn^2) \div 4sn^2.$

51.  $\sin A \sin B + \sin A \sin C + \sin B \sin C = (s^4 t^2 + 8snt^2 + t^4) \div 16s^2 n^2.$
52.  $\cos A \cos B + \cos A \cos C + \cos B \cos C = (s^4 t^2 - 16s^2 n^2 + t^4) \div 16s^2 n^2.$
53.  $(1 + \cos A)(1 + \cos B)(1 + \cos C) = s^2 t^2 \div 8n^2.$
54.  $\tan \frac{1}{2} A + \tan \frac{1}{2} B + \tan \frac{1}{2} C = (8sn + t^2) \div s^2 t.$
55.  $\cot \frac{1}{2} A + \cot \frac{1}{2} B + \cot \frac{1}{2} C = s^2 \div t.$
56.  $\tan \frac{1}{2} A \tan \frac{1}{2} B \tan \frac{1}{2} C = t \div s^2.$
57.  $\cot \frac{1}{2} A \cot \frac{1}{2} B \cot \frac{1}{2} C s^2 = s^2 \div t.$
58.  $\tan \frac{1}{2} A \tan \frac{1}{2} B + \tan \frac{1}{2} A \tan \frac{1}{2} C + \tan \frac{1}{2} B \tan \frac{1}{2} C = 1.$
59.  $\cot A \cot B + \cot A \cot C + \cot B \cot C = 1.$
60.  $\sin^2 2A + \sin^2 2B + \sin^2 2C + 2 \cos 2A \cos 2B \cos 2C = 2.$

We next append a few problems taken from the various mathematical publications of this country to illustrate their solutions by our method. They will be found to be almost irresolvable by any other procedure.

## I.

"Given,  $\left\{ \begin{array}{l} x+y+z+w+v=35 \\ x^2+y^2+z^2+w^2+v^2=285 \\ x^3+y^3+z^3+w^3+v^3=2555 \\ x^4+y^4+z^4+w^4+v^4=24309 \\ x^5+y^5+z^5+w^5+v^5=240275 \end{array} \right\}$  ; to find  $x, y, z, w,$  and  $v.$ "

[*The Wittemberger.*]

SOLUTION : By formulæ, (12), (13), (14), and (15), we find that  $m=470$ ,  $n=3010$ ,  $p=9129$ , and  $r=10395$ . Hence, the values of the five unknown quantities are the roots of the equation,

$$X^5 - 35X^4 + 470X^3 - 3010X^2 + 9129X - 10395 = 0.$$

$$\therefore x=3, y=5, z=7, w=9, v=11.$$

## II.

"Given,  $\left\{ \begin{array}{l} x^3+y^3+z^3=415423=b \\ x^5+y^5+z^5=1876049407=d \\ x^7+y^7+z^7=9190945907263=c \end{array} \right\}$  ; to find  $x, y,$  and  $z.$ "

[*The School Visitor.*]

SOLUTION : By formulæ, (2), (4), and (6), we obtain the equation,

$$s^{13} - 16bs^{10} + 63ds^8 + 15b^2s^7 - 225cs^6 + 252bds^5 - 175b^3s^4 \\ + (450bc - 189d^2)s^3 - 315b^2ds^2 + 175b^4s = 225b^2c - 189bd^2.$$

Substituting the numerical values of  $b, d,$  and  $c,$  in this equation of



the thirteenth degree, we find by its resolution that  $s=127$ .

We then find that  $m=(2s^5-5s^2b+3d)\div 5(s^3-b)=4679$ ; and next that  $n=(s^6-5s^3b+9sd-5b^2)\div 15(s^3-b)=49913$ .

Hence, from the cubic equation,  $X^3-127X^2+4679X=49913$ , we find that  $x=19$ ,  $y=37$ ,  $z=71$ .

### III.

"Given,  $\left\{ \begin{array}{l} w(x+y+z)=a \\ x(y+z+w)=b \\ y(x+z+w)=c \\ z(x+y+w)=d \end{array} \right\}$ ; to find  $x$ ,  $y$ ,  $z$ , and  $w$ ."

[*N.E. Journal of Education*, Boston, Mass.]

SOLUTION; We may deduce the following equations:

$$m=\frac{1}{2}(a+b+c+d)=g.$$

$$m^2+ns+2p=ab+ac+ad+bc+bd+cd=h.$$

$$s^2p+smn+2pm-n^2=abc+abd+bcd+acd=k.$$

$$s^2pm-snp+p^2=abcd=l$$

From these equations, we find by elimination, that  $9p^4-(6h-2g^2)p^3+(3gk-hg^2+h^2-6l)p^2-(hkg+2g^2l-g^3k-2hl)p=klg+g^4l-hg^2l-l^2$ .

From this equation  $p$  is determined, and then  $s$  and  $n$  from the equations,

$$s^2=(hp+l-m^2p-3p^2)\div pm.$$

$$n=(h-m^2-2p)\div s.$$

Hence, the coefficients of the following equation are known whose roots are the values of  $x$ ,  $y$ ,  $z$ , and  $w$ :

$$X^4-sX^3+mX^2-nX=-p.$$

### IV.

"Given:  $x+y+z+w=s=100$ .

$$(xyz+xyw+xzw+yzw)(xy+xz+xw+zy+wy+zw)=b=201010896.$$

$$(x+y+z-w)(x+y-z+w)(x-y+z+w)(-x+y+z+w)=c=4677120.$$

$$(x+y+z)(x+y+w)(x+z+w)(y+z+w)=d=30808420.$$

To find  $x$ ,  $y$ ,  $z$ , and  $w$ ."

[*The National Educator*.]

SOLUTION: We may find  $m=[16d-c-s^4+\sqrt{(384s^3b+s^8+2s^4c-32s^4d+c^2-32dc+256d^2)}]\div 24s^2=3607$ ;

$$\text{and } n=b\div m=55728;$$

$$\text{and } p=[5s^4+5c-32d+\sqrt{(384s^3b+s^8+2s^4c-32s^4d+c^2-32dc+256d^2)}]\div 48=311220.$$

$\therefore$  From the equation,

$$X^4-100X^3+3607X^2-55728X=-311220,$$

we find that  $x=15$ ,  $y=21$ ,  $z=36$ , and  $w=38$ .

## V.

"Given, the perimeter of a triangle, or  $a+b+c=s=15600$  inches; the sum of its perpendiculars, or  $P_a+P_b+P_c=s_1=9118$  inches; and the sum of the radii of its escribed circles, or  $r_a+r_b+r_c=s_2=17810$  inches; to find the sides,  $a$ ,  $b$ , and  $c$ , of the triangle."

[*The Wittemberger.*]

SOLUTION: We may find by formulæ, (21), (27), and (31), that

$$m=(4s_1s_2^2+s_1s^2)\div(4s_1+8s^2)=77047100;$$

$$\text{and } n=(4s_2^2+s^2)(2ss_1s_2-s^3)\div(4s_1+8s^2)^2=119956200000.$$

Hence, the values, of  $a$ ,  $b$ , and  $c$ , are the roots of the equation,

$$X^3-15600X^2+77047100X=119956200000.$$

$$\therefore a=3250 \text{ inches, } b=5070 \text{ inches, } c=7280 \text{ inches.}$$

## VI.

"In the triangle,  $ABC$ , we have given: the product of the sides, or  $abc=n=2572500$ ; the product of the perpendiculars, or  $P_aP_bP_c=h=1234800$ ; and the product of the angle-bisectors, or  $l_al_bl_c=1470000$ ; to find the sides,  $a$ ,  $b$ , and  $c$ , of the triangle."

[*The Yates County Chronicle*, Penn Yan, N. Y.]

SOLUTION: We have, in any triangle,  $k=\frac{1}{2}(hn)^{\frac{1}{2}}=7350$ . From formulæ, (21), (33), and (38), we derive the equation,  $2bs_1^4-8kns_1^2+bn s=-2bk^2$ , where  $s_1$  is one-half of the perimeter of the triangle. By making this equation numerical, we find that one of its roots is 210. Therefore,  $s=420$ . We next find from the following general equation that  $m=(bn+4kns)\div bs=57575$ . Hence, the values of  $a$ ,  $b$  and  $c$ , are the roots of the equation,

$$X^3-420X^2+57575X=2572500.$$

$$\therefore a=175, b=140, c=105.$$

## VII.

"In the triangle,  $ABC$ , we have given:  $\cos A+\cos B+\cos C=d=\frac{17}{2}$ ;  $\tan\frac{1}{2}A \tan\frac{1}{2}B \tan\frac{1}{2}C=q=\frac{9}{2}$ ; and  $P_aP_bP_c=h=328536000$ ; to find the sides,  $a$ ,  $b$ , and  $c$ , of the triangle."

[*The Yates County Chronicle.*]

SOLUTION: We find by the aid of formulæ, (21), (33), (40), and

$$(56), \text{ that } s=\left\{4h\div q(d-1)\right\}^{\frac{1}{3}}=2600;$$



We now construct the biquadrate, the four roots of which will be the values of  $a$ ,  $b$ ,  $c$ , and  $d$ . The biquadrate is,

$$X^4 - 432X^3 + 61632X^2 - 3234816X = -47775744.$$

We find the four roots of this equation to be, 24, 72, 192, 144.

Arranging these values in conformity with equation (1), we have,

$$\left\{ \begin{array}{l} AB = a = 23 \text{ feet.} \\ BC = b = 72 \text{ feet.} \\ CD = c = 192 \text{ feet.} \\ DA = d = 144 \text{ feet.} \end{array} \right\} \text{ Ans.}$$

We have given examples enough to show the usefulness of the method employed for solving simultaneous equations. The number could be increased to almost an infinite extent. We leave the subject to the further pursuit of the reader, who may carry it to any extent he may desire, by choosing data ad libitum from our formulæ.

—o—o—

PI ( $\pi = 3.141952+$ ) EXPRESSED BY THE DIGITS. (Vol. IV, 411.)  
A nearer approximation to the value of pi ( $\pi$ ), by the use of the nine digits, than given in your November number, 1887, may be expressed

as follows :  $\frac{8 \times 9 \times 710}{36 \times 452} = 3.141592+$  correct to the last figure ; there-

fore,  $\frac{36 \times 710}{8 \times 9 \times 452} = \text{area of a circle to radius 1 ; and } \sqrt{\frac{36 \times 710}{8 \times 9 \times 452}}$

= side of an equal square. T. P. STOWELL, Rochester, N. Y.

A COLLECTION OF N. H. REGISTERS WITH NOTE AND COMMENT THEREON. Mr. Joseph A. Stickney, the author of this neat souvenir and collector of a complete set of N. R. Registers, has done a good deed for his fellow bibliographers and the future historian. It is a duodecimo of 38 pages, giving a sketch of the first Registers published in New England, from 1767 to 1800 inclusive, 34 Nos., in nearly all of which matters relating to New Hampshire are mentioned.

Beginning with the first N. H. Register published for 1772, each copy of all Registers and Manuals is described and a synopsis of each one's contents given down to 1885 inclusive, a total of 122 Nos.

The first for 1772 by Daniel and Robert Fowle, Portsmouth, who were the first printers in New Hampshire, coming here in 1756. For

the next fourteen years, 1773 to 1786, no register is known to have been printed. For three years, 1787 to 1789, it was published by George Jerry Osborne, Portsmouth. For four years, 1790 to 1793, no register is known to have been published. For 1794, by Eliphalet Ladd, Dover; for 1795, by Stearns & Winslow, Exeter; for three years, 1796 to 1798, by Henry Ranlet, Exeter; also, for 1797, by Samuel Bragg, Jr., Dover; for 1799, no register known to have been published; for ten years, 1800 to 1809, by Dr. Samuel Curtis, Amherst; also, for 1801, by J. A. Harper, Portsmouth; for four years, 1810 to 1813, by George Hough & Daniel Cooledge, Concord; also, for seven years, 1811 to 1817, by Charles Norris & Co., Exeter; also, for 1816, by Daniel Cooledge, Concord; for two years, 1818 and 1819, by Isaac Hill, Concord; for two years, 1820 and 1821, by Hill & Moore, Concord; for seventeen years, 1822 to 1838, (1834, second edition), by John Farmer, Concord; also, for two years, 1833 and 1834, by N. J. T. George, Concord; for two years, 1839 and 1840, by Jacob B. Moore, Concord; for four years, 1841 to 1844, by Asa Fowler, Concord; for twenty-one years, 1845 to 1865, by G. Parker Lyon; for two years, 1866 and 1867, by Edson C. Eastman, Concord; for twelve years, 1869 to 1880, by Claremont Manufacturing Company; Claremont; for 1881, by S. L. Farman; White River Junction, Vt.; for four years, 1882 to 1885, by White River Paper Co., White River Junction, Vt.

The Political Manual for sixteen years, 1857 to 1872, was compiled by George E. Jenks, and published by McFarland & Jenks, Concord; the first three years (1857 to 1859) being also called "Legislative," and the last five years (1868 to 1872) had "N. H. Register combined" with the title.

The People Political Hand-Book for three years, 1875 to 1877, was compiled by Frederic Kelsey, and published by Charles C. Pearson & Co., Concord.

Since Mr. Stickney's bibliography was published three more Registers, for 1886, 1887, and 1888, have been published. A set of these Registers and Manuals are of great value for the fund of information in them concerning New Hampshire; and the same applies to the registers of any state.

A similar bibliography of Robert B. Thomas' Old Farmer's Almanac, (1793 to 1888), was compiled and published by Rev. J. H. Fitts, a few years ago.

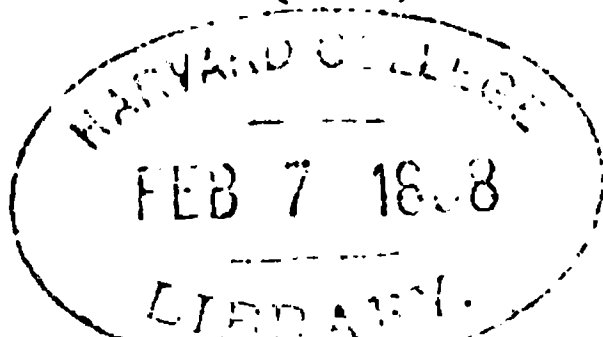












MISCELLANEOUS

## NOTES AND QUERIES,

WITH ANSWERS.

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*"Rich is that universal self whom thou worshippes as the Soul."*—VEDAS.

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VOL. V.

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*Periodicity—A Mathematical and Phasical Proof  
of the Immortality of Man.*

NEVER, FOREVER!

FOREVER, NEVER!

Among the papers left by Dr. Ivan Slavonski, the Russian mathematician, whose death was announced in the St. Petersburg papers, was one paper in 1870, with the above title. For many years preceding his death, Dr. Slavonski had been Professor of Pure Mathematics in the Imperial University of St. Petersburg, and was recognized throughout Europe as one of the first mathematicians of his day. He discovered the formula for the reduction of "the irreducible case," in which Cardan's rule had failed, and thus rendered it possible to solve, by formulæ, cubic equations containing an imaginary expression — a task which had previously been considered almost as difficult as the solution of the problem, the "squaring of the circle." At his death he left a number of papers in the care of his friend and colleague Prof. Imanoff, expressing at the same time his wish that if anything of value should be found among them, it should be published. The first of these papers which has seen the light, is the one here, published and which was read by Prof. Imanoff before the Society of Physical sciences at St Petersburg, and printed in the volume of its Transactions published in April, 1870. It is impossible, and perhaps not desirable, to reproduce here the entire essay, as in some parts of it are calculations, the expression of which would require the use of many

cumbrous mathematical signs and formulæ, that would be unintelligible generally, except to those who had made mathematics a special study. It is however both possible and desirable to give the gist of the thesis and make it comprehensible. It is evident at the outset that Dr. Slavonski intended this essay to be complete, and therefore he started at the natural beginning of his subject. To lose as little time as possible, let us also begin at the beginning.

#### PERMUTATION.

In how many ways is it possible to arrange two letters, A and B, as they are arranged in a printed line, such as this. A moment's thought will show that there are but two ways, namely: A B and B A; the three letters, A B C, give six permutations, which are as follows:

A B C, A C B, B A C, B C A, C A B, C B A.

In these permutations, observe that all three of the letters enter into each result, and that each enters into it but once. This is permutation according to law, or rather it is the law of permutation, for it is impossible to make more than six different arrangements of the three letters, A B C. Take four letters, A B C D, and arrange them in all possible ways, and you will find that but twenty-four different arrangements are possible as follows:

A B C D,	B A C D,	C A B D,	D A B C,
A B D C,	B A D C,	C A D B,	D A C B,
A C B D,	B C A D,	C B A D,	D B A C,
A C D B,	B C D A,	C B D A,	D B C A,
A D B C,	B D A C,	C D A B,	D C A B,
A D C B,	B D C A,	C D B A,	D C B A.

The rule for finding the number of possible permutations is as follows: To find the permutation of two letters, multiply 1 by 2; of three letters, multiply 1 by 2 and the result by 3; of four letters, multiply 1 by 2, the result by 3, and this last result by 4. Therefore, for five letters, A B C D E, there will be 120 permutations; for six letters, 720 permutations; for seven letters, 5,040 permutations; for eight letters, 40,320 permutations; for nine letters, 362,880 permutations, and for ten letters, 3,628,800 permutations, and so on through the alphabet, which twenty-four letters of our alphabet can be permuted

620,448,401,733,239,039,360,000

ways and no more; and so on for any larger number of things we choose to take.

#### COMBINATION.

In combination, which is the disposition of any number of letters,

or objects, in all possible ways, we find two letters, A B, may be arranged by pairs in four ways, namely, A A, A B, B A, B B ; three letters, A B C, may be varied by pairs nine ways, as follows :

A A, A B, A C, B A, B B, B C, C A, C B, C C,

Therefore, to show the vast number of combinations of a few things taken by twos, by threes, by fours, and so on, it is only necessary to state that in this way the twenty-four letters of the alphabet would give

1,391,724,238,887,252,999,425,128,493,402,200

combinations and no more. This result is definitely fixed by the law of their arrangement. This statement and exemplification of these laws, well known to tyros in mathematics, may be wearisome, but it is necessary for the full comprehension of the strange results which follow from it when taken in connection with other elements of the problem. Let us now proceed to something less dry and formidable.

#### MASS MOTION AND MOLECULAR MOTION.

In the present state of science it seems almost superfluous to speak of the changes which are constantly taking place in every part of the universe with which we are acquainted. Mass motion is shown on the largest scale in the whirling of planets and suns, and systems of suns. The geological eras descending by a series of colossal steps down into the darkness of the past eternity, show cycles upon cycles of changes in the earth we inhabit ; nor does science rest here, for back in the night of time, the solar system was a nebulous ball whirling in space and throwing from it rings which afterwards broke up and produced the planets. The solar system is known to be in motion about some larger sun, to which it is but a planet, and its satellites are in turn but satellites. Molecular motion cannot be seen, but is known to be present among the molecules of all bodies. No scientist doubts that mass motion and molecular motion exist in accordance with law, and in no other way.

#### ATOMS. DO THEY EXIST? .

Chemical bodies which, upon being analyzed are found to be composed of different element, are compounded in definite proportions. Thus water consists of eight parts by weight of oxygen and one of hydrogen, and this proportion never varies. The elements are not only bound together in a quantitative order, in the stable condition of substances, but when a compound is broken up and its elements released from their affinities, they cannot escape the law of numerical destiny ; they rush into new unions, but still in definite proportions. This is the fact, but the mind is not satisfied with facts. It seeks for the causes that determine combination in the fixed ways, and prevent it from taking place in others. The atomic theory assigns a cause for

this. An atom is a portion of matter exceedingly small and capable of being divided. This definition is good enough for present purposes, but another will be given presently to answer any metaphysical objection which may be raised against the existence of atoms. The old Greek philosophers loved to speculate about the infinite divisibility of matter, and held that we cannot conceive of particles so small that, if possessing weight, bulk, and figure, they cannot be still divided ; but after all is said, the question is not about a possibility of conception, but of the facts of nature. The chemist assumes that in nature the divisibility of matter has a limit. As Liebig says :

“ Without disputing the infinite divisibility of matter the chemist merely maintains the firm and immutable foundations of his science when he admits the existence of physical atoms as a truth entirely incontrovertible.”

If then, for instance, water be formed by the combination of atoms of oxygen with atoms of hydrogen the atomic theory affords an explanation of why its composition is definite and constant. It is not necessary to ask him who says that it is impossible to know whether atoms exist or matter is infinitely divisible—who says the fact is “ unknowable ”—it is only necessary to ask such a man whether or not there is the smallest existent portion of matter ? To say that there is not, is to say that there is a portion of matter not smaller than itself, which is a self-evident absurdity.

#### ARE ATOMS INFINITE IN MATTER ?

This question has also been relegated needlessly to the realms of the unknowable as Dr. Slavonski has shown, and shown by so simple a proposition as the following :

“ We have shown by a proposition, the opposite of which is unthinkable, that there are atoms—that is, there are the smallest existent particles of matter. By the same manner of reasoning it may be shown that the number of these atoms is limited. Thus there are as many of these smallest existent portions of matter as there are, for the simple reason that to state that there are more or less than this number of them, is to state an unthinkable proposition and to be guilty of stating a great absurdity.”

The number of atoms that exist must be limited. To speak of an “ unlimited number ” is to be unintelligible.

#### THE RESULT.

Thus far four elements of the problem by Dr. Slavonski have been given. They are :

*Firstly*—That bodies which undergo change of place according to law, can be permutated and combined in a fixed number of ways.

*Secondly*—That everything in the universe is undergoing change according to law.

*Thirdly*—That atoms exist, and are not a metaphysical abstraction or a physical makeshift.

*Fourthly*—That the number of these atoms is limited.

It now remains to show the results of these four propositions when brought to bear upon each other. If there were but three atoms in the universe, and the law of their existence were that they could be changed in respect to each other only by taking position in contact, the first with the second, the second with the third, and so on in one line,

A B C, A C B, B A C, B C A, C A B, C B A,

it is evident that only six permutations would be possible. If taken in pairs there would be nine combinations,

A A, A B, A C, B A, B B, B C, C A, C B, C C.

The truth is, however, in regard to the actual sum of the atoms in the universe, that they can combine in so great a number of ways that men generally speak and think of their combinations as infinite; the word "infinite" in this case as in all others, being the means of covering the ignorance and the impossibility of the conception of vast numbers of units; in space units of miles, and in time units of years. If it were possible to cover the surface of the earth with numbers, the numbers thus written would not form the billionth part of the atoms of the material used to write them. Yet, in the universe, the number of atoms is limited by, and only by, the atoms themselves. These atoms are continually undergoing change of place—for atomic changes can only be changes of place—and this change is according to law. There must then come a time when all possible changes and combinations shall have been exhausted. It is possible that when that time comes the universe will be at rest, as Spencer, Helmholtz, and Thompson also maintain, looking at the subject in a different light. Dr. Slavon-ski thought this was not possible, and for the following reason: In the first place, heat and motion, or, if this expression be objectionable, heat or motion, are as much properties of matter as impenetrability is. No matter is without them, and properties of matter are nothing but

#### THE UNIVERSE ALWAYS IN MOTION.

what we ever find connected with it. If we cannot conceive of matter which is not impenetrable, neither can we think, nor have we any experimental scientific reason to suppose, there is or can be matter which does not move. Consequently, reasoning in the positive and scientific method from the known properties of matter, we arrive at the conclusion that there can be no rest for the atoms which are the component parts of the universe. Besides this, since time has no ob-

jective existence but is merely a necessary form, a category of thought, if the universe is ever to be at rest it is at rest now. The very fact that it is in motion, not as a mass, but in its molecules, shows that it has always been in motion; without heat there is no motion, and without motion there is no heat. Without gravity there is no motion, and even the first "floculi" of Herbert Spencer could not have been formed.

Again, Carnot's rule (from which Spencer, Helmholtz, and Thompson have concluded that the universe must at some future time be at rest) is, that work is produced by heat only when heat is transmitted from a hotter to a colder body; and that even here the heat is but partially converted into work. The deduction from this is, that, since all the heat is not converted into work, a part of it is stored up and becomes static, and therefore less and less work must from year to year be done in the universe, until finally the heat is equally distributed, and the universe rests. That this conclusion is not altogether a just one may be seen when we take into consideration the fact that although heat is but partially converted into work, or motion, it may not be restored in its entirety, for motion may produce magnetism or electricity, which in turn will be converted into heat, the store of which is thus kept at its maximum. This plainly results from the doctrine of conservation of force. Matter itself is indestructible, or must be so considered, until it is shown to be otherwise, and its properties are therefore indestructible.

#### A SYSTEM OF CYCLIC CHANGES.

There will then come a time when all possible place-changes of the atoms have been exhausted, and nature must return upon its tracks, as when a pendulum has swung to its utmost limit it must return again. When all changes have been exhausted, the next position taken must be one which before existed. Ever in motion the atoms revolve, and all their revolutions must repeat what they repeated before. The order of the universe is unlimited, for there is nothing beyond to disturb it. Even the universe is a system of cyclic changes, ever turning upon itself.

#### THE PROOF OF IMMORTALITY.

These cyclic changes Dr. Slavonski calls "Periodicity." Since all positions of the atoms repeat themselves after ages have past, there must come a time when the universe will be in the same condition as it now is, and consequently, the earth in all respects, be the same that it is at this moment and that it has already been a vast number of times. The geological eras which have made it what it is will again work out their necessary results, and man will appear again, each individual being precisely the same individual he is now, for he will be born of the same parents, be reared under the same circumstances,

live as he now lives — with those with whom he lives, and die as he will die a few years from now. But—*resurgat*—“ he shall live again ” when the cyclic change shall again have passed.

#### THIS IS IMMORTALITY.

To live is to be conscious, and that which affects us when we are unconscious is unnoticed by us. Suppose the reader of this article were to die before he had half finished it ; the time which would elapse before he should reappear on earth as an infant would be unnoticed by him, and consequently *for him* it would not exist. So far as he is actually concerned he would be immortal. If it were possible for him to die and be brought to life again between the successive swingings of a pendulum, the world would seem the same to him as when he left it ; and yet not more so than if millions of years had passed — for at the close of the cyclic change the world will be actually the same as it was when it began — between two seconds it would be apparently the same ; and this doctrine is more beautiful than any other.

“ IF A MAN DIE, SHALL HE LIVE AGAIN.”—*Job* XIV, 14.

The old man's dream is to live over again the days of his childhood and youth, and this dream must become a reality. Death does not bear him into the region of the unknown, but into the known.

This is a *resumé*, a condensation of Dr. Slavonski's paper which has excited much attention among the thinkers of Europe. The objections which are urged against the paper may be stated as follows :

The first is that to which all systems are open which treat of the universe, namely : that there is danger, and even great probability, that some essential element of the problem has been overlooked. The universe is large, and if one disturbing cause be not considered in arguments pertaining to it, the result may not only be, but must be vitiated. If this objection be a valid one, man can never arrive at truth and it is useless to seek for it.

A French critic, in speaking of it, condemns the way in which it is brought forward, as audacious, and compares the “ presumptuous boldness ” of it with that which La Place spoke of his

#### NEBULA HYPOTHESIS :

“ *Je presente (cette hypothese) avec la defiance que doit inspirer tout ce qui n'est point un resultat de l'observation ou calculi.* ”

Audacity is a funny thing for a Frenchman to condemn, and in reality Dr. Slavonski's theory is the result both of observation and calculation ; it is a compound of physics and mathematics ; it is *A Physical and Mathematical Proof of the Immortality of Man.*

It is hardly necessary to refer to “ religious objections,” for there



never was yet a theory made which did not have to contend with them. Suffice it to say that the objections are what they usually are. Others say that the doctors have measured the possibility of things by the possibility of thought. This objection is usually urged by positivists, whose opinions are always worthy of respect ; but in reply it may be said that their own theories—those of Spencer and Huxley — do precisely the same thing, and that no thinker can avoid doing so, except a philosophical skeptic. Moreover, the doctrine that the measure of the truth of a proposition is the unthinkableness of its opposites, is only a statement that the measure of the impossibility of things is the possibilities of thought. With this, Dr. Slavonski's theory is left for thought. True or not, it will suffer the fate of all theories.

In connection with Dr. Slavonski's theory one should also read that of Mr. Buxton, delivered as a lecture in Albany, N. Y., January 18, 1841, on "Analogy Out-Analogized, being the doctrine of Ontology Extended ; proving the Earth to be Endowed with Animality." A *résumé* of this novel production may be given in a future number.



**THE UMBRELLA—ITS HISTORY.** In Queen Anne's time it is mentioned, both by Swift and Gay, that the umbrella was used by women, but up to the middle of the 18th century, it appears never to have been used in England by men ; though Wolfe, the then future conqueror of Quebec, wrote from Paris, in 1752, describing it as in general use in that city, and wondering that so convenient a practice had not yet penetrated to England. Hanway, the famous traveler and philanthropist, who returned to England in 1750, is said to have been the first Englishman who carried an umbrella ; and a Scotch footman named John MacDonald, who had traveled with his master in France and Spain, mentions in his curious autobiography, that he brought one to London in 1778, and persisted in carrying it in wet weather, though a jeering crowd followed him, crying, "Frenchman, why don't you get a coach?" In about three months, he says, the annoyance almost ceased, and gradually a few foreigners, and then some Englishmen, followed his example. Defoe had described the umbrella as one of the contrivances of Robinson Crusoe, and umbrellas were in consequence called "Robinsons." They were looked upon for a long time as a sign of extreme effeminacy, and they multiplied very slowly. Dr. Jamieson, in 1782, is said to have been the first person who used one at Glasgow ; and Southey's mother, who was born in 1752, was accustomed to say she remembered the time when any one would have been hooted who carried one in the streets of Bristol. A single coarse cotton one was often kept in a coffee house to be lent out to customers, or in a private house to be taken out with a carriage and held over the heads of ladies as they got in or out ; but for many years those who used umbrellas in the street were exposed to the insults of

the mob and to the persistent and very natural animosity of the hackney coachman, who bespattered them with mud and lashed them furiously with their whips. But the manifest convenience of the new fashion secured its ultimate triumph, and before the close of the century umbrellas had passed into general use. — *Lecky's History of England*.

VESTIGES OF CIVILIZATION ; or the *Ætiology* of History ; Religious, *Æsthetical*, Political, and Philosophical. (Vol. I, p. 48.) The author of this work, anonymously written, in the preface, says that " History is written in America, *biographically* ; in Britain, *empirically* ; in Germany, *scholastically* ; in France alone, *philosophically* ; but nowhere is it written *scientifically*." Who is the author of this book? LOGOS.

After diligent inquiries, I have ascertained that the author of the above-mentioned work was *James O'Connell* ; that he was a lawyer without practice in New York City, supporting himself by writing anonymously for reviews, and translating works from the French, etc ; that not being appreciated he became a misanthrope and recluse ; that shortly after the appearance of the " Vestiges " — of which only a few hundred copies were published, and which fell flat,— he left for London, and from there went to Paris where he died. I have further ascertained that he was educated at the College of William-and-Mary, at Emmettsburg, Md. ; and that on account of a disagreement with the professors and his adjuration of Romanism, he left without taking his degree. This is all that my informant seems to remember, except faintly recalls reading a translation, by Mr. O'Connell, of what impressed him as a most remarkable French work, entitled, he believes, " The Tonlon Galleys." The translation was contributed to a paper published, he thinks, by one named Bullard.

Can any reader give me further information, or put me on the track of any, concerning the life and literature of this singular man. Any items in reference to his ancestry or career ; especially any suggestions as to how I might verify the fact of his death, and get a trace of his last friends, would be cordially appreciated by the writer. I seek this information for literary reasons.

A. L. LEUBUSCHER, Water Mill, L. I. N. Y.

LITERARY INGENUITY. The following line is said, in an old book, to have " cost the inventor much foolish labor, for it is a *perfect line*, and every word is the very same word, both backward and forward."

ODO TENET MULUM, MADIDAM MAPPAN TENET ANNA.

SAYINGS OF JESUS (THE CHRIST). (Vol. III, p. 218.) Several times sayings of Jesus have been quoted in your magazine, which are not found in the King James' version. Can you give a selection of more of them, or state where such can be found? J. P. SHIELDS.

Many of the sayings of Jesus are quoted by the early Christian Fathers from the gospels then in existence, some of which are now extant, though considered apocryphal, that is, uncanonical. Some of these gospels have been collected and published by William Hone, Henry Cowper, S.-Baring Gould, Alexander Walker, and others. We will here give a chapter of these "Sayings," remarking that the exact wording varies slightly in some of them in the writings, just as some of those vary in the canonical gospels.

#### SAYINGS OF JESUS NOT RECORDED IN THE CANONICAL GOSPELS.

1. "It is better to give than to receive."—*Acts* xx, 35.
2. "And straightway, the Holy Spirit (my mother) took me by one of the hairs of my head, and bore me away to the great mountain called Thabor."—Origen, *Homily* xv; Jerome Hieronymus, *Mich.* vii 6, quoting from the Gospel of the Twelve.
3. "He who shall wonder shall reign, and he who reigns shall rest." Clemens Alexandrinus, *Stromata* i, 9.
4. "Keep the mysteries for me and the sons of my house."—*Homily* xix, 20.
5. "Be ye proved money-changers; retain that which is good metal, reject that which is bad."—*Stromata* i, 28.
6. "Be never glad unless ye are in charity with your brother."—Jerome, *Pelagius* i, 3.
7. "I am come to abolish the sacrifices; if ye cease not from sacrificing, the wrath of God will cease not from weighing upon you."—Epiphanius, *Hæresies* xxx, 16.
8. "I have a desire to eat the flesh of the Paschal Lamb with you."—*Hæresies* xxx, 15.
9. "Let us resist all iniquity and hate it."—Barnabas, *Epistle* iii, 11.
10. "He that is near me is near the fire, and he that is far from me is far from the kingdom."—Didymus, *Patrum Nova Bibliotheca* p. 34.
11. "Be never joyful except when ye see your brother walking in love."—Jerome, *Præfat. Com. in Jesai*, lib. xviii.
12. "In those things in which I shall overtake you, in those things will I judge you."—Justin Martyr, *Dialog. Tryphon*.

The following "parable" is recorded by Irenæus (*Adv. Hæres.* v. 33)

which Jesus taught, but it is not found in the canonical gospels :

“The days shall come in which a vine shall grow, each vine having 10,000 boughs, and on each bough 10,000 branches, and on each branch 10,000 sprigs, and on each sprig 10,000 clusters, and on each cluster 10,000 grapes, and each grape when pressed, shall yield 25 measures of wine. And when one of the saints shall take hold of a cluster, another shall cry out, ‘I am a better cluster, take me ; through me bless the Lord.’ ”

TO CUT A DIDO. Whence came the expression “to cut a dido?”  
INQUIRER II.

About 800 B. C. Dido (called also Elissa), daughter of Belus II, king of Tyre, and sister of Pygmalion, fled from that kingdom, on account of family dissensions and regal disputes, to the coast of Africa.

Here she desired land of the natives to found a city and queendom, but they bargained her a piece of land such as could be covered with a bull's hide. She evaded their jealous concession by cutting the hide into very small strips, tying them together, and thus surrounding a quite large tract of land. Hence, this incident is supposed to have been the foundation of the above phrase. She and her following built a city, called it Carthage, and Brysa (meaning *a hide*) became the citadel of the place. The name Dido means *the beloved*; Elissa means *the joyous one*. The anachronism of dates is said to be made by the poets as a matter of license. Troy's destruction is usually put down as 1184 B. C. Æneas visits Dido soon after; this would make Carthage contemporary with Troy. For a discussion of the subject further, see Anthon's “Classical Dictionary,” p. 439, article *Dido*.

LAST WORDS OF THE ANARCHISTS. (Vol. II. p. 497 ; III, p. 143 ; IV, p. 292.) The last words of the four anarchists hung in Chicago, November 11, 1887, were as follows :

August Spies—“There will a be time when our silence will be more powerful than the voices you strangle today ! ”

Adolph Fischer—“Hurrah for anarchy ! This is the happiest moment of my life.”

Albert R. Parsons—“Will I be allowed to speak, O men of America ? Let me speak, Sheriff Matson ! Let the voice of the people be heard ! O —— ”

George Engel—“Hurrah for anarchy ! ”

## QUESTIONS AND ANSWERS.

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**PORTRAITS OF CHRIST.** (Vol. III, p. 441.) The portraits of Christ were taken from those of Serapis. It is idle to believe in any genuine one. I would just as soon believe in the one taken by the bloody sweat on Veronica's handkerchief—absurd alike.

**DOUBLE CONSCIOUSNESS.** (Vol. IV, p. 397.) The subject of "Double Consciousness," in your November No., deserves careful study. Perhaps more than one soul tampers with our physical organism. Then, too, we have two cerebral hemispheres, not identical in functions; a "head" and "heart"; a cerebral and ganglial nervous system. We *feel* and accordingly act; we *think* and determine action.

**PELASGI, PELASGOS.** (Vol. IV, p.) I doubt the name *Pelasgi* being from *pelasgos*, the sea. I would quicker derive it from *palaios*, ancient. It would be as accordant with etymology. So, too, would *Pelesti*, or Philistines—probably a cognate people. The *Cherethites* of the book of Second Samuel were *Creti*; and the *Pelethites*, *Philisti*. If so, they were Pelasgi. At any rate there is no other conjecture more plausible.

**THE ROSICRUCIANS.** (Vol. IV, p. 433.) I was interested in the paragraph on Rosicrucians. If the *rose* had a part in the name, etymology would dictate it to be spelled *Rosa*-crucians. Yet the impaled rose has a phallic rendering. The rose on the cross, of course, is a phonetic ideograph. So the ass's head in the Judæan temple was phonetic of the Hebrew letters for IHVH — one being Aō, and the other Yaō. The Aryan term *Ros* or *Ras* is like Hebrew for chief, origin, leader. The crucified chief, may be so understood. All true parables have a plurality of interpretations; each true on its own plane.

"GOD IS A CIRCLE WHOSE CIRCUMFERENCE IS EVERYWHERE, AND WHOSE CENTER IS NOWHERE TO BE FOUND." (Vol. III, p. 62; IV, p. 412.) Emerson says: "St. Augustine described the nature of God as a circle whose center was everywhere, and its circumference nowhere." I supposed this was from Hor-Apollo. A. WILDER.

We have always observed that the words were ascribed to Hermes Trismegistus, but have never seen them in his works — "The Divine Pymander," nor "Virgin of the World." H. P. Blavatsky, in her work, "Isis Unveiled," credits the quotation to Hermes, and further-

more adds that she would put it: "God is a circle whose center is everywhere, and whose circumference is nowhere to be found."

THE "THREE KINGS" OF ORION. (Vol. V, p. 16.) The kings referred to are generally believed to be the "three shepherd-kings" who are said to have followed the Star of Bethlehem at the Nativity of Jesus the Christ. Their names are given as *Caspar*, *Melchior*, and *Balthasar*; while the names of the "three star-kings" are *Alnitak*, *Anilam*, and *Mintaka*. These three stars always point to the Pleiades or Seven Stars on one side, and to Sirius or the Dog-Star on the other side. In Job these stars are called the *Bands of Orion* (xxxviii, 31); the ancient husbandmen called them *Jacob's Rod*, and sometimes the *Rake*. The University of Leipsic, in 1807, gave them the name of *Napoleon*. In Green's "Astronomical Recreations" they are called the *Golden Girdle*; while the more common appellation is the *Yard*, because they are about three degrees in length and are use in estimating distances between other stars. The stars forming Orion's sword are called the *Ell* because they are one and a quarter the length of the *Yard*.

PSEUDO-JONATHAN. (Vol. IV, p. 299.) The term *pseudo*, "false," has been applied to several person, but its meaning is more in the sense of *mistaken* than *false*. Jonathan ben-Uzziel was called Pseudo-Jonathan because tradition credits him with a Targum on the Pentateuch subsequent to that of Onkelos, in which some commentators think he undertook to rival Onkelos.

*Pseudo*-Athanasius is applied to Athanasius (Junior), or Celetes, surnamed Herniosus, bishop of Alexandria, A. D. 590. He is supposed to be the author of several works ascribed to Athanasius the Great, hence the name.

*Pseudo*-Daniel is applied to the author of the book of Daniel by Hengstenberg in his "Christology of the Old Testament," p. 251. Some commentators like Hitzig, in *Verbemerk* § 3, imagine that the Daniel of Ezekiel (xiv, 14, 20), was purely a mythical personage, whose prototype is to be sought in Melchizedek, and that the character was borrowed by the author of the book of Daniel as suited to his design. The order of the names, "Noah, Daniel, Job," seems to indicate the antiquity of the three persons. Job was one of the early

husbandmen (Gen. XLVI, 13), while the book that bears his name is considered one of the oldest poems extant.

*Pseudo-Daphne* is applied to the asteroid numbered 47 whose real name is Melete, because its discoverer Goldschmidt, mistook it for Daphne, No. 41. (See N. AND Q. Vol, V, pp. 8, 14).

*Pseudo-Matthew* is applied in the same manner to Saint Matthew the reputed author of the first synoptic gospel, because some commentators think he wrote the "Gospel of the Hebrews," or copied his gospel from it; while others say he elaborated his from Saint Mark and still others claim that Mark's gospel is an epitome of Matthew's.

*Pseudo-Orpheus* is applied to the author of one of the Sibylline Books because of the close resemblance of some of the sentiments to those in the songs of Orpheus.

*Pseudo-Smerdis* is applied to Ahasuerus the successor of Camby-ses who seized the throne of Persia B. C. 522, and was murdered after a brief reign of eight months. Herodotus and Josephus do not agree as to this person's real name. He is supposed to be Artaxerxes I of Ezra VI, 7-24.

*Pseudo-Sibyl* is applied by Drummond, in "The Jewish Messiah," p. 13, to an Egyptian Jew, the author of Book III of the Sibylline Oracles, and prophesies the advent of the Messiah, and the author is assigned to Ptolemy Physcon B. C. 170-117.

PETRIFIED BODIES. (Vol. IV, 412.) The body of a child, nine months old, was buried in the "Old Burying-Ground," Stoddard, N. H., in January, 1818. In 1856, the body was disinterred, with others adjacent to it, for the purpose of removal to another lot. The body of this child alone had petrified. It was nearly as white as marble, and the features were as natural as the day it was buried, though the body soon crumbled on being exposed to the air. As the adjacent bodies were not petrified, it would be natural to suppose that another buried in the same place would not necessarily petrify.

S. L. G., Hollis, N. H.

THE "CROAKERS PIECES." The first four of the once famous *Croaker Pieces* were written by Joseph Rodman Drake for the New York *Evening Post*, in which they appeared between the 10th and 20th of March, 1819. Then Drake made Fitz-Greene Halleck a partner, and the remainder of the pieces were signed "Croaker & Co." The paper written by Drake was "The American Flag"; and the last of the series, "Curtain Conversations," was written by Halleck.

**MAGIC SQUARE FOR 1888.** This square is composed of the series of odd numbers beginning with 457.

**1888.**

457	484	483	463
479	467	469	473
471	475	477	465
481	461	459	487

If added in the following manner each sum is 1888 :

1. Added virtically, horizontally, and diagonally.
2. The sum of the four numbers composing the corners.
3. The sum of the quadrate group comprising a corner.
4. The sum of the four numbers forming the center.

Such squares are more perfectly magical than ordinary magic squares.

H. A. WOOD, Cleveland, Ohio.

**HOW TO ARRANGE AND ADD THE DIGITS AND CIPHER TO = 100.** Many persons have tried their their skill at this problem. There are more ways than one. Here is one way :

$$\begin{array}{r} 95\frac{1}{2} \\ 40\frac{3}{8} \\ \hline 100 \end{array}$$

**LOGARITHMS.** The logarithm of 1.2345679 (omitting the 8) has a remarkable peculiarity which renders the computation of its logarithm very simple.

$$\begin{array}{lcl} \text{Thus } \log. 9.99999999 & = & 0.999999999 = \log. 10 - 1 \\ \log. 8.1 & = & .908485018 \end{array}$$

$$\log. 1.2345679 = .091514980$$

$$\begin{array}{lcl} \text{Then } \log. 12345679 + \log. 9 & = & 111111111 \\ \log. 12345679 + \log. 18 & = & 222222222 \\ \log. 12345679 + \log. 27 & = & 333333333 \\ \log. 12345679 + \log. 36 & = & 444444444 \\ \log. 12345679 + \log. 45 & = & 555555555 \\ \log. 12345679 + \log. 54 & = & 666666666 \\ \log. 12345679 + \log. 63 & = & 777777777 \\ \log. 12345679 + \log. 72 & = & 888888888 \\ \log. 12345679 + \log. 81 & = & 999999999 \end{array}$$



*Chemical Elements in order of their Discovery.*

ELEMENT.	DATE.	DISCOVERER.	ELEMENT.	DATE.	DISCOVERER.
Gold,		} Ancients.	Sodium,	1807	Davy.
Silver,			Potassium,	1807	Davy.
Copper,			Calcium,	1808	Davy.
Iron,			Barium,	1808	Davy.
Tin,			Strontium,	1808	Davy.
Lead,			Boron,	1808	Davy.
Mercury,			Iodine,	1811	Courtois.
Sulphur,			Lithium,	1817	Arfvedson.
Carbon,			Selenium,	1817	Berzelius.
Antimony, (?)	1450	Basil Valentine	Cadmium,	1818	Stromeyer.
Bismuth, (?)	1450	Basil Valentine	Silicon,	1823	Berzelius.
Zinc, (?)	1520	Paracelsus.	Zirconium,	1824	Berzelius.
Phosphorus,	1669	Brand.	Bromine,	1826	Balard.
Arsenic,	1694	Schrœder.	Glucinum,	1828	Wöhler.
Cobalt,	1733	Brandt.	Yttrium,	1828	Wöhler.
Platinum,	1741	Wood.	Thorium,	1828	Berzelius.
Nickel,	1751	Cronstedt.	Aluminium,	1828	Wöhler.
Hydrogen,	1766	Cavendish.	Magnesium,	1829	Bussy.
Fluorine,	1771	Scheele.	Vanadium,	1830	Sefstrom.
Nitrogen,	1772	Rutherford.	Lanthanum,	1839	Mosander.
Oxygen,	1774	Priestley.	Didymium,	1841	Mosander.
Manganese,	1774	Gahn.	Erbium,	1843	Mosander.
Chlorine,	1774	Scheele.	Ruthenium,	1845	Claus.
Tungsten,	1781	d' Elhujar.	Caesium,	1860	Bunsen.
Tellurium,	1782	Reichenstein	Rubidium,	1860	Bunsen.
Molybdenum,	1782	Hjelm.	Thallium,	1862	Crookes.
Uranium,	1789	Klaproth.	Indium,	1863	{ Reich and Richter.
Titanium,	1791	Gregor.			
Chromium,	1797	Vauquelin.	Gallium,	1875	{ Lecoq de Boisbaudran.
Columbium,	1801	Hatchett.			
Tantalum,	1802	Ekeberg.	Ytterbium,	1878	Marignac.
Cerium,	1803	Berzelius.	Scandium,	1879	Nilson.
Iridium,	1803	Tennant.	Samarium,	1879	{ Lecoq de Boisbaudran.
Osmium,	1803	Tennant.			
Rhodium,	1804	Wollaston.	Germanium,	1886	Winkler.
Palladium,	1804	Wollaston.			

Besides the above there is a number of substances which have been announced as elements, but the true nature of them is still under investigation. These include :

Name.	Date.	Discoverer.	Name.	Date.	Discoverer.
Thulium,	1879,	Cleve.	Praseodymium,	1885,	Welsbach.
Holmium,	1879,	Cleve.	Dysprosium,	1886,	Lecoq de Boisbaudran.
Neodymium,	1885,	Welsbach,			

There are more than thirty others, not named as yet, but temporarily denoted by letters. H. CARRINGTON BOLTON, New York City.









## MISCELLANEOUS

NOTES AND QUERIES,  
WITH ANSWERS.

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*"When Adam was made, the ancient worlds were called forth again."*—ZOHAR.

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MARCH, 1888.

No. 3.

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LETTERS OF "JUNIUS." In what newspaper were the letters of  
"Junius" published, and when? LLEWELLYN.

These letters appeared in the *Public Advertiser*, published in London, in the last century. The dates of the paper containing the articles are as follows:

1768—Nov. 21.

1769—Jan. 21; Feb. 7, 21; Mar. 8, 19; April 18, 21, 24; May 30; July 8, 19, 29; Aug. 8, 22; Sept. 7, 19, 25; Oct. 13, 17, 20; Nov. 15, 29; Dec. 12, 19.

1770—Feb. 14; Mar. 19; April 3; May 28; Aug. 22; Nov. 14.

1771—Jan. 39; April 22; June 22; July 9, 24; Aug. 13; Sept. 28, 30; Oct. 5; Nov. 2, 28.

1772—Jan. 21 (two letters).

The authorship of the letters of "Junius" has been attributed to no less than 51 different persons, and as the names of these persons may be of interest, we append them here, with a reference to some work where they are mentioned. Many more references could be given, but these are sufficient.

Adair, James, M. P. Serjeant at Law, died 1798.—Wade's "Junius," xv; Letter of Junius April 9, 1771.

Allen, Captain.—*Notes and Queries*, 1st Series, xi, 302.

Barré, Lieut.-Col. Isaac, M. P.—*Morning Herald*, 1813.

Bentinck, William Henry Cavendish. — Coventry's "Critical Enquiry," No. 61.

Bickerton, Mr.—*Oxford Spy*, 1818, page 24.

Boyd, Hugh M'Aulay, born, 1746, died 1791. — Almon's "Anecdotes," Vol. I, 1797.

Burke, Rt. Hon. Edward, b. 1728, d. 1797.—*Public Advertiser*, October 15, 1771.

Burke, William.—Wade's edition of "Woodfall's Junius," No. 86.

Butler, John, Bishop of Hereford.—Dr. Good's "Essay on Junius," in the edition published in 1814.

Camden, Charles, Lord, b. 1713, d. 1794.—Wade's "Junius."

De Lolme, John Lewis, b. 1745 (?), d. 1807. — Dr. Busby's work, No 46. Junius quotes from De Lolme's "Essay on the English Constitution."

Dunning, John, afterward Lord Ashburton, b. 1731, d. 1783.—Jacques's work, p. 141.

Dyer, Samuel, b. 1725, d. 1772.—Dr. Good's "Essay."

Flood, Henry, b. 1732, d. 1791.—Dr. Good's "Essay."

Francis, Sir Philip, b. 1740, d. 1818. — Parkes & Mervale's "Memoirs of Sir Phillip Francis," 1867, Vol. I, pp. 232-303.

George III, King of England.—Ireland's poem, "Scribbleomania," page 308, for a curious note on this subject.

Gibbon, Edward, b. 1737, d. 1794.—Woodfall's "Junius," Nos. 52.

Glover, Richard, b. 1712, d. 1785.—Woodfall's "Junius," No. 41, 42

Grattan, Henry, b. 1750, d. 1820.—Almon's "Letters."

Greatrakes, William, b. 1729, d. 1781.—*Gentlemen's Magazine*, 1813.

Grenville, George, b. 1712, d. 1770. He died before the letters were completed. Hence his claims need not be noticed.

Grenville, James, d. 1783. He was brother of the last mentioned, but he himself laid no claim to the letters.

Hamilton, William Gerard, b. 1729, d. 1796. — *Public Advertiser*, November 30, 1771.

Hollis, James.—Referred to by Wade and Allibone.

Hollis, Thomas, b. 1720, d. 1774.—Coventry's "Critical Enquiry."

Jackson, Sir George, Secretary of the Admiralty. — *Notes and Queries*, 1st Series, I, 172, 276, 322.

Jones, Sir William, b. 1746, d. 1794.—Coventry's "Critical Enquiry."

Kent, John, d. 1773.—"Letters of Junius," July 21, 1769.

Lee, Maj.-Gen. Charles, b. 1731, d. 1782.—Girdlestone, in Wade's Woodfall's "Junius," Nos. 33, 37.

Lloyd, Charles, d. 1773.—Burke's work, Nos. 63, 64, on his claim.  
 Lyttleton, Thomas, 2d Lord, b. 1744, d. 1779.—*Littell's Living Age*, XLII, 223.

Maclean, Laughlin, b. 1727, d. 1777.—"Waldie's (P.) Library," edited by John Jay Smith.

Marshall, Rev. Edmund, d. 1797.—Nichols's "Literary Illustrations of the Eighteenth Century," VIII, 680.

Paine, Thomas, b. 1737, d. 1809. — Woodfall's "Junius," No. 89; also, see W. H. Burr's elaborate work in favor of Paine.

Pitt, William, Earl of Chatham, b. 1708, d. 1778. — "Chatham Papers," page 52.

Portland, William, Duke of Portland, b. 1738, 1809. — Johnston's work, No. 47.

Pownall, Thomas, b. 1722, d. 1805.—Woodfall's "Junius," No. 84.

Rich, Lieut.-Col., Sir Robert.—Woodfall's "Junius," No. 83.

Roberts, John, d. 1772.—*Public Advertiser*, March 21, 1772.

Rosenhagen, Rev, Philip.—*Notes and Queries*, 3d Series, v, 16.

Sackville, George, Viscount, b. 1716, d. 1785.—Wraxall's "Memoirs of his own Time," II, 90.

Shelburne, Earl of, Marquis of Lansdowne, d. 1804. — Wade's Woodfall's "Junius."

Stanhope, Philip Dormer, Earl of Chesterfield, b. 1695, d. 1772.—Woodfall's "Junius," Nos. 55, 79, 80.

Suett, Richard, d. 1805.—Woodfall's "Junius," No. 53.

Temple, Richard, Earl, b. 1711, d. 1779.—"Grenville Papers," edited by William J. Smith (L. 1852).

Tooke, John Horne, b. 1736, d. 1812.—"Memoirs of John Horne Tooke," II, 358.

Walpole, Horatio, Earl of Oxford, b. 1717, d. 1797. — Wilke's "Papers of a Critic," II, 158.

Wedderburn, Alexander, Lord Loughborough, b. 1733, d. 1805.—Holland's "Memoirs of the Whig Party."

Wilkes, John, b. 1727, d. 1797.—*The Gazetteer*.

Wilmot, James, D. D., b. 1726, d. 1807.—Beckford's "Vathek."

Wray, Daniel, b. 1701, d. 1783. — Nichols's "Literary Illustrations of the Eighteenth Century."

For further details, see the very complete bibliography of "Junius," in Cushing's "Initials and Pseudonyms," New York, 1885, pp. 146-157, prepared by A. R. Frey, of the Astor Library, New York.



THE SMARAGDINE TABLET. (Vol. I, p. 29 ; IV, 358.) What work of Hermes contains the "Smaragdine Tablet," to which you refer in your paper on *The Staff of Adam and The Shém-Hammephorásh*? What translation is preferable? ALEX. CUTTS.

The "Pymander" has been published in several editions. Those in our library are :

Hermes Trismegistus : his Divine Pymander. Edited by Paschal Beverly Randolph. Prefatory notes by Alfred E. Giles, and Flora S. Russell. Octavo, pp. 144 ; Boston, 1871.

The Divine Pymander of Hermes Mecerurius Trismegistus. Translated from the Arabic by Dr. Everard [1650]. *Credo mercurium Trismegistuan Sapientem Egyptium Floruisseante Pharaonem*. With introduction and preliminary essay by Hargraves Jennings. Quarto, pp. 112. Madras, India, 1884.

The Theological and Philosophical Works of Hermes Trismegistus, Christian Neo-platonist. The Poemandres. Translated from the original Greek, with preface, notes, and indexes, by John David Chambers. Octavo, pp. 170 ; Edinburgh, 1882.

The Divine Pymander of Hermes Trismegistus. Reprinted (from the original English translation) in the *Journal of Speculative Philosophy*, Vol. XX, Nos. 3 and 4, July and October, 1886 ; edited by William T. Harris, Concord, Mass.

A translation of the Smaragdine Tablet is found in the former two works cited, and also in the following works :

The Philosopher's Stone, a lecture before the Chicago Philosophical Society, by Gen. N. B. Buford, p. 14.

Isis Unveiled, by Helen P. Blavatsky, Vol. I, p. 507.

New Platonism and Alchemy ; an outline of the interior doctrines of the alchemists of the middle ages ; by Alexander Wilder, p. 24.

Also in Mackenzie's "Royal Masonic Cyclopædia," New York, p. 671, translated from Dr. Everard, from the Latin of Ficinus, from the great work of the learned Jesuit, Athanasius Kircher, in his "Œdipus Ægyptiacus."

Eliphaz Levi (Abbè Alphonse Louis Constant) says the Emerald Stone is "the whole of magic in a single page."

For the enlightenment of this correspondent we give here another translation of the Smaragdine Tablet (Emerald Stone), taken from the Madras edition (p. ix), as a matter of comparison with the translation given in this magazine, Vol. I, p. 29 :

1. I speak not fictitious things, but that which is certain and most true.

2. What is below, is like that which is above ; and what is above, is like that which is below ; to accomplish the miracle of one thing.

3. As all things were produced by the one word of one Being, so all things were produced from this one thing by adaptation.

4. Its father is the sun, its mother is the moon, the wind carries it in its belly, and its nurse is the earth.

5. It is the father of all perfection throughout the world.

6. The power is vigorous if it be changed into earth.

7. Separate the earth from the fire, the subtle from the gross, acting prudently and with judgment.

8. Ascend with the greatest sagacity from the earth to heaven, and then again descend to the earth, and unite together the powers of things inferior. Thus you will obtain the glory of the whole world, and obscurity will fly away from you.

9. This has more fortitude than fortitude itself, because it conquers every subtle thing, and can penetrate every solid.

10. Thus was the world formed.

11. Hence proceed wonders which are here established.

12. Therefore I am called Hermes Trismegistus, having three parts of the whole world.

13. That which I had to say concerning the operation of the sun is completed.

HOGSHEAD—63 GALLONS. (Vol. V, p. 16.) The word *hogshead* is derived from the Danish "Ox-hud" (oxhide) and means "the larger skins," in contradistinction to the smaller goat skins. This is an instance of the misuse of the letter "h." WALTER H. SMITH.

"TRUTH, LIKE A TORCH, THE MORE IT'S SHOOK, IT SHINES." (Vol. I, p. 79 ; II, 321.) Prof. DeMorgan gives one stanza, without naming author, in "Budget of Paradoxes," p. 210 :

" Truth, like a torch, the more it's shook, it shines ;  
But those who want to use it, hold it steady ;  
They shake the flame who like a glare to gaze at,  
They heep it still who want a light to see by."

TAE MOABITE STONE. (Vol. IV, p. 15.) Inasmuch as you have published the text of the *Shapirah Manuscripts*, I would like to see also the text of the *Moabite Stone* published in your pages for reference ; any reliable translation. H. LANGDON LARKIN.

The Moabite Stone was discovered by Ganneau on a block of black basalt at Dibon in Moab, which, according to the decipherment given by him, is as printed below, taken from the *Archeological Review* for January and June, 1870. B. F. De Costa has also made a translation, (Royal octavo, N. Y., 1871). The fullest exhibit, together with the literature on the subject, is that of Dr. C. D. Ginsburg [second edition,]

London. 1871. Dr. Deutsch of the British Museum has also written a commentary on it. (See "The Palestine Exploration Fund," *Quarterly Statement*, No. 5).

I, MESHA, SON OF CHEMOSH, . . . KING OF MOAB, [SON] OF YABNI . . . MY FATHER REIGNED OVER MOAB (THIRTY YEARS), AND I REIGNED AFTER HIM; I MADE THIS ALTAR FOR CHEMOSH AT KARHAH ON ACCOUNT OF THE ASSISTANCE HE GAVE ME IN ALL BATTLES, AND BECAUSE HE MADE ME SUCCESSFUL AGAINST MY ENEMIES, THE MEN OF THE KING OF ISRAEL, WHO OPPRESSED MOAB A LONG TIME, FOR CHEMOSH WAS ANGRY AGAINST HIS LAND. HIS SON SUCCEEDED HIM, AND HE ALSO SAID, I WILL OPPRESS MOAB. IN MY DAYS HE (CHEMOSH) SAID, I [WILL GO] AND APPEAR (BE FAVORABLE) TO MOAB AND HIS TEMPLE; THEN ISRAEL WASTED CONTINUALLY. OMRI TOOK [THE PLAIN OF] MAHDEBA AND DWELT IN IT . . . . BUILT FORTY . . . . [AND DWELT] CHEMOSH THERE IN MY DAYS. I BUILT BAAL-MEON AND MADE (SACRIFICES) THERE . . . . AND I [BUILT] KIRYATHAN. THE MEN OF GAD [DWELT] IN [THIS] LAND FROM EARLY TIMES, AND THERE BUILT THE KING OF ISRAEL [YAAZER]; I BESIEGED THE CITY, TOOK IT, AND KILLED ALL [WHO DWELT] IN THE CITY, TO THE GRATIFICATION OF CHEMOSH AND MOAB; I MADE CAPTIVE THERE . . . [AND BROUGHT] IT TO CHEMOSH AT KERIYOTH. I REMAINED HERE WITH THE CHIEFS AND [THE SOLDIERS UNTIL] THE NEXT DAY. THEN CHEMOSH BADE ME GO AND TAKE NEBO FROM ISRAEL. [I AROSE UP] WENT IN THE NIGHT AND FOUGHT AGAINST IT FROM THE BREAK OF DAY TILL NOON; I TOOK IT, KILLED ALL, SEVEN THOUSAND . . . [TO PLEASE ASTOR] . . . . FOR CHEMOSH DEVOTED TO ASTOR . . . . I TOOK FROM THERE ALL THE VESSELS OF JEHOVAH, AND [OFFERED] THEM TO CHEMOSH. AND THE KING OF ISRAEL BUILT YAHAZ, AND DWELT THERE, WHEN I MADE WAR UPON HIM. CHEMOSH DROVE HIM OUT FROM THENCE; I TOOK FROM MOAB TWO HUNDRED MEN, ALL CHIEFS, TRANSFERRED THEM TO YAHAZ, AND BEGAN TO MAKE WAR AGAINST DIDON. I BUILT KIRHAH, HA-MATH-HA-YEARIM, AND HAMATH. . . . . I CONSTRUCTED THEIR GATES AND THEIR TOWERS; I BUILT THE PALACE, AND I MADE AQUEDUCTS (?) IN THE INTERIOR OF THE TOWN. THERE WERE NO CISTERNS IN THE INTERIOR OF THE TOWN OF KIRHAH, AND I SAID TO ALL THE PEOPLE, MAKE A DITCH AROUND KIRHAH WITH [THE MEN] OF ISRAEL. I BUILT (ARO)ER, AND I MADE THE PASSAGE OVER THE ARNON. I BUILT BETH-BAMOTH, WHICH HAD BEEN OVERTHROWN, AND BEZER, WHICH HAD BEEN DESTROYED. I FORTIFIED DIBON TO HOLD IT IN SUBJECTION, AND I CONSTRUCTED FORTRESSES IN THE TOWNS WHICH I ADDED TO [MY] LAND. I BUILT . . . BETH - DIBLATHAN, BETH-BAAL-MEON, AND TRANSPORTED THITHER [MOABITES] [IN ORDER TO TAKE POSSESSION OF] THE LAND. AT HORONAN DWELT [THE CHILDREN OF REUBEN] . . . . CHEMOSH TOLD ME, GO, FIGHT AGAINST HORONAN. [I FOUGHT AGAINST IT AND TOOK IT], [AND THERE DWELT] CHEMOSH IN MY DAYS . . . . .

*VOLAPÜK—The Universal Language.**Menad bal, puk bal.*—"One mankind, one language."

The word Volapük is from *vol*, world, and *pük*, language, that is, a world-language. Several articles on the new language have appeared in the press expounding and explaining it. We select from *The Open Court*, Chicago, material for an article.

Leibnitz devoted much time to the construction of his *Spécieuse Générale*, which fell flat. Labbe invented a philosophical language, and Kircher published his *Polygraphia* in 1663. In 1668 the Royal Society sanctioned John Wilkins' *Philosophical Language* by publication in London. Most inventors of this kind attempted the ideographic—to have signs represent ideas. We have this in the mathematics, in the plus and minus signs, but practically this is reverting to hieroglyphics.

Johann Martin Schleyer seems to have solved the problem, for in 1878, he arranged the most simple artificial language, and so rapidly has it become recognized as of practical use in Europe, Asia, and Africa, that one million persons are said to use it in their intercourse.

The alphabet employed is the Roman with some of the German dotted letters added. Volapük is formed on the general model of the Aryan tongues in its signs representing letters and words, the root words being taken from living languages, mainly Indo-Germanic and Romance. In making the Vocabulary, English afforded the largest number of words; Latin, German, French, and Spanish next, in the order named. The simple Anglo-Saxon roots abound in English and their brevity caused their adoption.

Savants, travelers, and merchants will have the greatest use of Volapük. It is said there are 800 languages at the present time — 40 or 50 of which are spoken by civilized people who are fast being united in their interests by railroads, telegraphs, and steamboats. It takes years to learn three or four Romance or Germanic tongues, and much longer to learn a single Hindoo or Semitic dialect. Turkish, Spanish, and Chinese are still more difficult. The principles of Volapük can be learned in a very short time, and a month's study and practice will make one a fluent writer and speaker. There are now a dozen or more periodicals published in Volapük, the commercial journals being the most favored. Soon medical and scientific works will be worded in the new language with an ever increasing number of cosmopolitan readers. Discoveries that have laid dormant for years because in inaccessible languages will be widely announced.

The numerals are 1 bal, 2 tel, 3 kil, 4 fol, 5 lul, 6 mäl, 7 vel, 8 jöl, 9 lül, 10 bals, 20 tels, 100 tum, 1,000 mil, 1,000,000 balion; 11 would be balsebal, 21 telsebal,—the letter a meaning and. Hence,

1 bal,	26 telsemäl,	51 lulsebal,	76 velsemäl,
2 tel,	27 telsevel,	52 lulsetel,	77 velsevel,
3 kil,	28 telsejöl,	53 lulsekil,	78 velsejöl,
4 fol,	29 telsezül,	54 lulsefol,	79 velsezül,
5 lul,	30 kils,	55 lulselul,	80 jöls,
6 mäl,	31 kilsebal,	56 lulsemäl,	81 jölsebal,
7 vel,	32 kilsetel,	57 lulsevel,	82 jölsetel,
8 jöl,	33 kilsekil,	58 lulsejöl,	83 jölsekil,
9 zül,	34 kilsefol,	59 lulsezül,	84 jölsefol,
10 bals,	35 kilselul,	60 mäls,	85 jölselul,
11 balsebal,	36 kilsemäl,	61 mälsebal,	86 jölsemäl,
12 balsetel,	37 kilsevel,	62 mälsetel,	87 jölsevel,
13 balsekil,	38 kilsejöl,	63 mälsekil,	88 jölsejöl,
14 balsefol,	39 kilsezül,	64 mälsefol,	89 jölsezül,
15 balselul,	40 fols,	65 mälselul,	90 züls,
16 balsemäl,	41 folsebal,	66 mälsemäl,	91 zülsebal,
17 balsevel,	42 folsetel,	67 mälsevel,	92 zülsetel,
18 balsejöl,	43 folsekil,	68 mälsejöl,	93 zülsekil,
19 balsezül,	44 folsefol,	69 mälsezül,	94 zülsefol,
20 tels,	45 folselul,	70 vels,	95 zülselul,
21 telsebal,	46 folsemäl,	71 velsebal,	96 zülsemäl,
22 telsetel,	47 folsevel,	72 velsetel,	97 zülsevel,
23 telsekil,	48 folsejöl,	73 velsekil,	98 zülsejöl,
24 telsefol,	49 folsezül,	74 velsefol,	99 zülsezül,
25 telselul,	50 luls,	75 velselul,	100 tum.

There is but one declension. The plural of any word is formed by adding *s*, and the plural is never formed in any other way. The first three vowels added to any noun form the genitive, dative, and accusative cases.

Thus	Nominative,	<i>Vol,</i>	World.
	Genitive,	<i>Vola,</i>	Of the world.
	Dative,	<i>Vole,</i>	To the world.
	Accusative,	<i>Voli.</i>	The, or a, world.

Plural of world would be vols. Every noun is declined in the same way. The verbs are all regular and there is but one conjugation. The tenses are denoted by the letters *a*, *e*, *i*, *o*, *u*, placed before the verbs ; the letter *p* preceding these denotes the passive voice.

The personal pronouns are *ob* I ; *ol* thou ; *om* he ; *of* she ; *os* it ; *on* they. The verb *Lof*, to love, would be conjugated thus :

<i>Löfob,</i>	I love.	<i>Löfobs,</i>	we love.
<i>Löfol,</i>	thou lovest.	<i>Löfols,</i>	ye love.
<i>Löfom,</i>	he loves.	<i>Löfoms,</i>	they (on) love.
<i>Löfof,</i>	she loves.	<i>Löfofs,</i>	they (f) love.

Imperfect,	<i>Alöfob,</i>	I loved.
Perfect,	<i>Elöfob,</i>	I have loved.
Pluperfect,	<i>Ilöfob,</i>	I had loved.
Future,	<i>Olöfob,</i>	I will love.
Future perfect,	<i>Ulöfob,</i>	I will have loved.
	<i>Palöfob,</i>	I am loved.
	<i>Pelöfob,</i>	I have been loved.

Negatives are *no*. Adjectives are formed by adding *ik* to the noun, *gud* is the good, and *gudik* is good—compared thus : *gudik, gudihum, gudihüm*. Adverbs are made by adding *o* to the adjective : *gudiko* is well. There is so much made from one stem or root that there is but little to memorize after learning the system.

Max Müller is quoted as saying : “ The universal language of Prof. Schleyer is well known to me. I thoroughly agree with the principles upon which it is based.”

A German poem, “ The Eye of the Child,” has been thus translated into Volapük :

#### LOG CILA.

O log cila, mag nifäla !  
 Logob velik stalis olik  
 No peglumöl fa ded sina,  
 Litol se ol jin lanelik.

As pronounced in English spelling the verse would sound somewhat as follows :

O logue chelah margue neyfaläh !  
 Logobue velique stalees olique  
 No paygloomwail fah daib senah,  
 Leetos say ole sheen lanelique.

The accent is on the last syllable in every word.

Volapük is free from all ambiguity. Every word is pronounced uniformly by all Volapükists speaking the “ universal language.”

Volaspodel is a “ corsepondent.” A Vocabulary is in preparation and soon to be published by M. W. Wood, M. D., of the U. S. Army, Volapük-English and English-Volapük on same page, about 325 pages. A department—Läbled Volapükik Gaseda Konodik—is published in *The Office*, New York, beginning November, 1887 ; Redakel : Charles E. Sprague, LTDL. E KAD.

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**ANAGRAMS.** The New York *Sun* recently published some very apt anagrams under the caption of “ Innocent Amusement.” I send you a few gathered from several sources, which will serve for a diversion to some of your readers, whether young or old :

Abraham Lincoln—is “ All in ban, march on ” ; also, “ Baron, call in Ham.”

Astronomers—are “ Moon starers ” ; also, make “ No more stars.”

Augustus DeMorgan—makes “ Great gun, do us a sum.”

Charles James Stuart “ Claims Arthur’s seat.”

Desperation—says “ Ned is a toper.”

Fulmination— says “ Sin is no fault.”

Funeral— is “ Real fun.”

Hannibal Hamlin—says “ Ban him in a hall.”

Horatio Nelson—says *Honor est a Nilo*, “ Honor is from the Nile.”

James Stuart is “ A just master.”

Masquerade—is “ Mad as queer.”

Monarch—“ March on.”

Misanthrope—says “ Spare him not.”

Misrepresentation—brings “ Simon Peter in tears.”

Napoleon Bonaparte—says “ No, appear not on Elba.”

New door— makes *One word*.

Old England—is “ Golden land.”

Penitentiary—says “ Nay, I repent it.”

Presbyterians—are “ Best in prayers.”

Punishment—is “ Nine thumps.”

*Quid est veritas*, (Vulgate) (“ What is truth,” John XIV, 18, ),—is answered by *Est vir qui adest* (“ It is the man who is before you.”)

Revolution—is “ To love ruin.”

Telegraphs—are “ Great helps.”

Thomas Babington Macaulay — “ Mouths big, a Cantab anomaly.”

William Shakespeare—“ We all make his praise.”

Victoria, England’s Queen—“ Governs a nice quiet land.”

MARGANA.

BENGOUGH — PRONUNCIATION OF THE NAME. (Vol. IV, p. 440.)  
*The Herald*, of Port Hope, Canada, (“ devoted to speling by sound ”),  
 for December, 1887, says :

“ Elsewhere we quote Mikljon (Meiklejohn) to sho that the gutural has been dropt from refusal to pronounce it. The pronunciation having changed, the speling shud folo suit and not lag centuries behind, stil indicating to the eye the gost of a gutural long since ded to the ear, and which shud hav been interd decently long ago. If ugh is silent, then stop at o. Bengo apears a les comon pronunciation than Bengof. Which is right we don’t determin. The beuty of the two following rules we spel by, is herein aparent as talying with the highset filology.”

Rule 1. Omit evry useles leter. Rule 2. Change *d* to *t*, *ph* to *f*, *gh* to *f*, if sounded so.

*Description of a Model Newspaper,*

DAILY, SEMI-WEEKLY, AND WEEKLY :

*Which paper should be owned and conducted by godly men, and should be sold at the lowest paying rate.*

As will be seen, this piece of metrical prose is in 8-and-7 trochaics. The lines, however, contain several peculiarities, all but the first of which need to be pointed out.

1. Each stanza is without rhyme.
2. No rhyme is found in any two contiguous stanzas taken as one.
3. In every stanza, the vowel or the diphthongal sound in the last accented syllable of each line, and that in the final (unaccented) syllable of each of the first and third lines, are all different.
4. Neither of the two final syllables of the first line of any stanza contains the same vowel or the same diphthongal sound as that in the terminal syllable of the last line of the preceding stanza.
5. The same vowel or the same diphthongal sound does not occur in the last syllable of any two contiguous stanzas.
6. The same vowel or the same diphthongal sound does not occur in the last syllable of the second line of any two such stanzas.
7. As half-stated in 3, the same vowel or the same diphthongal sound does not occur in the last syllable of the second line of any two contiguous pairs of lines, or half stanzas.

Moreover, no emphatic monosyllable is admitted where incompatible with the rhythm ; no unemphatic monosyllable is employed in an accented place ; no second and no fourth line (all which of course end on the accent) terminate on a secondary emphatic syllable of a word ; no word beginning with a vowel-sound comes immediately after one ending in a vowel-sound ; no word beginning with a consonant-sound comes immediately after one ending in the same consonant-sound ; and, excepting nineteen necessary but simple monosyllables and one echoed trisyllable, no word in the piece is used more than once.

The rigorous application of rules so minute and complex must sometimes, obviously, necessitate a recourse to forms of expression such as would scarcely be *chosen* in writing *freely*, — a consideration to be kept in mind in reading these verses.

The phonetic exhibit, on the right margin, is in explanation of rules 3 to 7 inclusive.

The following are the twenty words alluded to above : a, all, and, are, as, at, by, for, from, in, it, not, of, on, that, the, 'tis, to, with, abstinence. In verification of this list, it may be proper to state that



the writer has made an alphabetic assemblage of all the words in the piece.

The whole composition has many times been systematically and carefully compared with the above rules, 13 in all; and, in each of its 2239 checkable places (exclusive of those caused by comparison of the phonetics of the margin with the orthoëpics of the dictionary), it is believed to be strictly in accordance with the same.

#### I. — NEGATIVE.

	Accented.	Unaccented.
It rejecteth contributions *	ū	shŭ
Fav'ring wrong, untruth, or guile,	ī	
Or that countenance or wink at	ī	ă
Routs, the stage, or harmful sports.	ō	
It from things announced to happen	ă	p'n
Weedeth such as fail of worth;	ŭ	
And from gleanings past, historic,	ö	ī
Purgeth matters, lines, unsafe.	ā	
It admitteth nothing vulgar;	ŭ	ă
Doth not jest at sacred thoughts;	au	
And ignoreth outrage, swearing,	ā	ī
Hazards, drink, nicotian leaf.	ē	
It inserteth not nor hints of	ī	ö
Spiteful or injurious words;	ŭ	
But, when glaring vice it noteth,	ō	ě
Claims for guilty pains condign.	ī	
And it barreth fiction vapid,	ă	ī
Frivolous, corrupt, or low;	ō	
Shutting out the same as hurtful	ŭ	öö
Both to wise and saintly walk.	au	

#### II. — POSITIVE.

'Tis a sheet octavoed, — handy;	ă	ī
Fit in paper; impress clear;	ē	
And, regarding type-arrangement,	ā	ě
Excellent, attractive, spruce.	öö	
'Tis a journal prudent, sober,	ō	ě
Courtly, sensible, concise;	ī	
With, anon, a buoyant outbreak,	ou	ā
Hum'rous turn, or spice of wit.	ī	

\* Advertisements emphatically included.

'Tis a guest esteemed by fathers,	ah	ě
Matrons, children, misses, youth ;	öö	
Plenteous in gainful reading,	ē	ī
Fireside problems, wholesome tales.	ā	
'Tis a record prized of ranchmen,	ǎ	ě
Shepherds, tillers of the soil ;	oi	
And, amongst the social topics,	ö	ī
Giveth all the farm-hints new.	ū	
'Tis a bulletin for merchants,	ě	ǎ
Proxies,† holders bond or share ;	ā	
Trusty, full, on stocks and money,	ũ	ī
Commerce, trade, exchange, and gold.	ō	
'Tis a chronicle for workers,	ũ	ě
Whether using head or hands, —	ǎ	
For collegians philosophic,	ö	ī
As for navvies on the rail.	ā	
'Tis a news-collector, valued	ǎ	yũ
For its manifold accounts ;	ou	
Gath'ring in, from thousand sources,	ō	ě
Numberless occurrences, deeds.	ē	
'Tis a chart of useful knowledge,	ö	ě
And of sound affairs of taste ;	ā	
With alacrity producing	ū	ī
All essential fancy, fact.	ǎ	
'Tis a leader ardent, stalworth,	au	ũ
In the total-abst'nence league, —	ē	
Abstinence for self-secureness,	ū	ě
And for sake of friend or foe.	ō	
'Tis, concerning views of statecraft,	ā	ǎ
Independent, dauntless, firm ;	ī	
First, though, weighing ev'ry question	wě	yũ
In the scales of Truth and Right.	ī	
'Tis at feud with error, falsehood,	au	öö
Fraud, injustice, aught unclean ;	ē	
For the common weal contending,	ě	ī
Void of all intent unfair.	ā	

† Here used for brokers, agents, etc.

'Tis a guardian constant, helpful,	ě	öö
Of the lower creatures, dumb ;	ů	
Judging that Immanuel's dictate †	ĩ	ā
Loud condemneth ill to these.	ē	
'Tis a Mentor to the Christian, —	ĩ	yă
Middle-aged, or young or old ;	ō	
Urgent for unceasing progress,	ö	ě
And a faith that acts by love.	ů	
And, in chief, it has the sinner's	ĩ	ě
Highest welfare deep at heart ;	ă	
Making known, as fleet his life-days,	ĩ	ā
What should bring eternal good.	öö	

† The Golden Rule.

WILLIAM BOYD.

Cambridge, Mass., 1877.

"ODD AS DICK'S HAT-BAND." (Vol. V, p. 16.) Dr. Brewer, in his "Phrase and Fable," elucidates the saying as follows :

1. "As tight as Dick's hat-band." The hat-band of Richard Cromwell was the crown, which was too tight for him to wear with safety.
2. "Dick's hat-band, which was made of sand." His regal honors were "a rope of sand."
3. "As queer as Dick's hat-band." Few things have been more ridiculous than the exaltation and abdication of the Protector's son.
4. "As fine as Dick's hat-band." The crown of England would be a very fine thing for any one to get.

WALTER H. SMITH.

ST. JAMES' WAY. (Vol. V, p. 16.) The Milky Way is so called from the fact that it is seen to best advantage in August. "Old St. James's Day" is August 5th ; St. James, the Great Apostle, is referred to. A similar astronomical instance is referred to in the name of the Perseid meteoric shower, which precipitates itself about August 10th, and has earned for itself in consequence the phrase — "The tears of St. Lawrence."

WALTER H. SMITH.

We are told by Tylor, in his "Primitive Culture," Vol. I, p. 301, that the starry band that lies like a road across the sky, known as the *milky way*, is called by the Baustös, a South African tribe of savages, "The way of the gods" ; the Ojīs, another African tribe of savages, say it is "The Way of the Spirits," by which souls go up to heaven ; the North American tribes know it as "The Path of the Master of

Life," also "The Path of Life," and "The Road of Souls," where they travel to the land beyond the grave.

Some of the ancient philosophers maintained that the *Via Lactea*, or "Milky Way," was formerly the sun's path, and that its present luminous appearance is the track which its scattered beams left visible in the heavens. The more proper name is the Galaxy.

BOHÆME'S "WHEEL OF BIRTH." (Vol. IV, p. 395.) The *wheel of birth* is called by Jacob Bohæme *Centum Naturæ*. This does not simply mean the revolving of life and of the forces of life in general, which is so justly comparable to a circling wheel, and which is liable to be brought into disorder by sin. The "Wheel of Birth," in a stricter sense, is the "Wheel of coming into existence," the "Wheel of Becoming," the first magical life-circle, which is the becoming of all natural and creaturely birth and becoming; the first restlessly circling movement, which is the womb and basis of the life that is working itself into shape. It is a secretly-burning wheel, because "life is a fire" (*ignis ubique latet*). In Bohæme's works, image succeeds image, metaphor succeeds metaphor; he, therefore, designates it by another symbol as the "Dark Fire-root," which never dares to catch fire and burst into fierce flames (whereby the whole of life would be brought into confusion), but is destined to remain in latency, in concealment, and in subordination to the higher principle. The "Wheel of Birth" may be described as the "Hearth of Life," or, the "Mother of Life." In Nature it is Fire, in the world of souls and spirits it is Desire. Modern thinkers disagree with Bohæme on this point, assigning *instinct* as the deepest root in natural life; and restrict *desire* to self-conscious life.

In the Epistle of James (III, 6,) it is called "the course of nature," the Greek being *trochôs tês genêscos*; the Latin, *rotam nativitatis nostræ*.

The Emphatic Diaglott translates it "the wheel of nature."

George R. Noyes' translation, "the wheel of life."

The Douay Version (Vulgate), "the wheel of our nativity."

Julia A. Smith's translation, "the wheel of creation."

Jonathan Morgan's translation, "the course of creation."

Friends' translation, "the whole course of our being, and is kindled in the birth."

Murdock's Syriac translation, "the series of our generation that rolls on like a wheel."

## QUESTIONS.

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1. Can any one give information relative to the manufacture of the ancient "Greek Fire" ? Also, of the manufacture of "Russia sheet iron," and imitations of the same ? Also, of "Russia leather ?

R.

2. Who is the author of the expression, "The Seven Cardinal Virtues of a politician are 'The Five Loaves and Two Fishes.' "

A. R. CHIVIST.

3. In England the driver of horses sits on the right side of a carriage and turns out to the left ; if he is a teamster, he walks on the right side of his cattle and turns out to the left.

In the United States a driver of horses sits on the right side and turns out to the right ; if he is a teamster, he walks on the left side of his cattle and turns out to the right.

Can any reader state at what period in the history of the colonies this radical change was made, and also the reason which led to its adoption ?

DJAFAR.

4. Who were the thirty disciples of Hillel I, wh, in the language of the Talmud, "were worthy to possess the power of stopping the sun, like Joshua" ?

R. K. D.

5. Whence the origin of making the 31 verses of Proverbs XXI, apply to the destiny of males, and the 31 verses of Proverbs XXXI, apply to the destiny of females, each verse to the birth-day ?

R. K. D.

6. Gen. Sir Henry Johnson, a British general, was born in Dublin, 174,8 and died March, 1835. Bart. Oct. 2, 1818 ; finally made a Major-General ; married Rebecca Franlas, a celebrated wit ; was in command at Stony Point, surprised and taken prisoner by General Wayne, and after the capture of Yorktown, returned to England and distinguished himself at many places during the Irish Rebellion of 1798.

Can any of the numerous readers and contributors of N. AND Q., inform me why he wears a narrow black band accross his forehead as displayed in all his authentic portraits ? Please state full particulars as to cause, etc.

M. O. WAGGONER, Toledo, O.

7. What are the particulars connected with the Ethan Allen statue known as Kinney's Heroic Statue ? What is its correctness or life-like representation of this old hero ? Shall be pleased to have a full detail of all that pertains to this or any other alleged likeness or portrait of him extant.

M. O. WAGGONER.

8. Where and when was the word "Sublime" first applied to the Third Degree of Blue Lodge Masonry.

E. A.











MISCELLANEOUS

NOTES AND QUERIES,

WITH ANSWERS.

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*"He is a rash man, who outside of pure mathematics, pronounces the word impossible."*—ARAGO.

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VOL. V.

APRIL, 1888.

No. 4.

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*Speculations Concerning Matter.*

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Let us shut our eyes and think. We will ask ourselves some hard questions, and we shall simply tell the truth when we admit our ignorance. With some such confession at the outset, let us bravely attack the problem.

That which we actually know is little enough, compared with what is taken for granted. Our assumptions have stood so long in the place of facts that we shall find more difficulty in giving them up than in accepting any new knowledge, based upon no matter how great weight of evidence. We are, then, so far as we are able, to lay aside our opinions, as if they had never been formed, and to take the attitude of learners. Standing wistfully in the class for small beginners, we begin with wonder, and wonder how we shall begin.

The very first question staggers and dismays us: Is there any matter? With united voice you say at once, "Yes, matter is." You go farther; your mind goes at a gallop to no end of conclusions. You are persuaded beforehand. All the generations of all ages assert it. The proposition needs no debate. You even agree to do without evidence, testify alone, and rest your case. "Matter is!" But we reserve the right to cross-question the witness: Assertion is not proof. Very well, you go on and say, for substance. "I, Richard Roe, know; I knew John Roe; I helped put him in the ground after he was lead; I have a wife, and I can't be mistaken about it; I am fifteen-

years the elder ; she reminds me of that often. But what is the use of more evidence than we have? we eat, drink, smell matter ; see, hear, feel, taste, get drunk on matter ; we breathe it, absorb it, secrete it ; we may weigh it, pound it, divide, grind and pulverize it — but we can never get away from it ; in it we live, move and have our being ; in short, we are matter—therefore I say again, matter is ! ” You say so. Well, who are you?

Now, as a matter of fact, you cannot answer this apparently simple question, and have probably never made the attempt. You, as an individual, the unit of the race, present a highly complex organism. But what are you? Of what are you? You may say you are of the earth, earthy. Reasoning in the circle in which our limitations compel us to grope, no other answer can be given. But what is the earth? How readily you reply, “The earth is a part of a system of which our sun is the centre.” But of what is our solar system a part? In response to this inquiry the answer is less ready, still you venture to say, “Our solar system is one of many such systems in space.” Upon being pressed for further information, as to number, relative size, distances from each other, relative age, composition, origin, purpose and so on, you may recite the few well-ascertained facts of astronomy, but upon the whole you decline to furnish a bill of particulars.

But can you form the faintest mental conception of space? Try it. What is it? Summon to your aid the genius of computation and mete out its volume. Come, ye children of light, and read me my riddle! Can man by searching find out — space? Assault the problem ; grapple with it ; master it if you may. From the far points amid the inter-stellar depths, beyond which the telescope is blind, prolong the intellectual vision and assign to space its limits. Whither-ward and how stand the towers that guard its borders? Has it a centre, and if so, our poor logic demands a circumference. And beyond this — what? Come, boaster, begin. Is it here? Is it there? What answer? In the presence of this awful mystery we stand to-day, baffled and foiled. Thought, like the tired dove, would fain return. Imagination folds its weary wings, and of Science the asserting voice is hushed!

But you want to talk about matter. Very well, let us come back to earth. After putting our feet upon good old terra firma we know where we are. Yes, you think you know just where you are. But you don't. Unfortunately for our peace of mind we are surrounded by space and may as well surrender at once. This globe of ours lives in space, and every crevice, chink and cranny of the cosmos is full of it. Plenum is the word. It stands ready to fill all vacancies, but gets out of the way and goes somewhere whenever called upon. It will stop up a hole so much quicker than lightning that the probabilities are in favor of its having been there before the hole was made.

It accommodates itself to the environment, and consents to everything but a vacuum. Should space ever be vanquished in any professor's vacuum tube, the crack of doom would summarily end all. There's a motive power for some future Edison to tame and put in harness. Why not? 'Tis as easy as lying. But you say, "Space is nothing in itself — it is only the vehicle, the medium, the — room; you can't have anything, you know, without a place to put it. Space is that place; wherever there is nothing, nothing is there — it is simply the absence of anything — don't you see?" I seem to see the drift of the witness: You would define space as something full of nothing, unless otherwise occupied. Well, that makes everything clear. Space is nothing. Indescribable, extensionless, measureless, termless — why not nameless? There being no such thing we will henceforth do without it. Good bye, space.

But no number of farewells will dismiss it. Avoid it we cannot. Can we either talk, reason, or think without it? Concerning this first-born mystery we habitually speak in the terms of the rest of our knowledge; yet, in spite of this intimate and familiar contact, life-long and continuous, we are still strangers. Now how do the authorities assist us? Let us appeal to the definers: Worcester says "space is Extension, considered independently of anything which it may contain; that which makes extended objects conceivable and possible." Locke says, "Pure space is capable neither of resistance nor motion." What are these but explanations that do not explain? The core of the definition seems to lie in one word — NOTHING.

Why longer cling to this shadow? We see, or seem to see, that space is after all but an idea, born of necessity, christened and clothed and set up in the intellectual temple, side by side with the gods of Time and Sense, Spirit and Matter. But I see you are growing weary; let us rest our tired brains by thinking upon Nothing — synonym Space — lest peradventure this hydra which has hitherto swallowed all, devour us.

WILLIAM E. MOORE, Manchester, N. H.

**TERMS USED IN TALKING TO DOMESTIC ANIMALS.** In controlling the movements of domestic animals by the voice, besides words of ordinary import, man uses a variety of peculiar terms, calls and inarticulate sounds—not to include whistling—which vary in different localities; In driving yoked cattle and harnessed horses teamsters cry "get up," "click click" (tongue against teeth), "gee," "haw," "whoa," "whoosh," "back," etc., in English-speaking countries: "arre," "arri," "juh," "gio," etc, in European countries.

In the United States "gee" directs the animals away from the driver, hence to the right. Webster's Unabridged states, however, in England the same term has the opposite effect because the driver

walks on the right hand side of his team. In Virginia mule drivers gee the animals with the cry "hep-yee-ee-a:" in Norfolk, England, "whoosh-wo:" in France, "hue" and "huhaut:" in Germany "hott" and "hotte": in some parts of Russia "haita," serve the same purpose. To direct animals to the left another series of terms is used.

In calling cattle in the field the following cries are used in the localities given: "boss, boss" (Conn.): "sake," "sake" (Conn.): "coo, coo" (Va.): "sook, sook," also "sookey" (Md.): "sookow" (Ala.): "tlon, tlon" (Russia): and for calling horses, "kope, kope" (Md. and Ala.): for calling sheep, "konanny" (Md.): for calling hogs "chee-oo-oo" (Va.).

The undersigned is desirous of collecting words and expressions (oaths excepted) used in addressing domesticated animals in all parts of the United States and in foreign lands.

In particular he seeks information as to:

1. The terms used to start, hasten, haw, gee, back and stop horses, oxen, camels and other animals in harness.
2. Terms used for calling in the field: cattle, horses, mules, asses, camels, sheep, goats, swine, poultry, and other animals.
3. Exclamations used in driving from the person, domestic animals.
4. Any expressions and inarticulate sounds used in addressing domestic animals for any purpose whatever (dogs and cats).
5. References to information in works of travel and general literature will be very welcome.

Persons willing to collect and forward the above mentioned data will confer great obligations on the writer: he is already indebted to many correspondents for kind replies to his appeal in *NOTES AND QUERIES* for the *Counting-out-Rhymes of Children* the results of which have been published by Elliot Stock, London, with that title.

To indicate the value of vowels in English please use the vowel-signs of Webster's Unabridged, and in cases of difficulty spell phonetically. All correspondence will be gratefully received, and materials used will be credited to the contributors.

H. C. BOLTON, University Club, New York City.

**THREE EIGHTS IN SUCCESSION.** It is 111 years since our heroic grandfathers and great-grandfathers wrote the three successive sevens, in the year succeeding American Independence. It will be 111 years before our grandchildren and great-grandchildren, will write the three successive nines. Then 223 years later, if the earth still revolves, time will deal a hand with four of a kind—four twos, 2222—something that has not happened since the days of Peter the Hermit.

## *Notes on the History of the Magic Lantern.*

The "magic" lantern is an outgrowth of the *camera obscura* the origin of which is unknown. Its invention is usually attributed to John Baptist Porta, but Libri (*Histoire des sciences mathématiques en Italie*, Paris 1841, 4 Volumes, octavo,) has shown that it was frequently mentioned by authors of much earlier date.

The first mention of the *camera obscura* occurs in unpublished MSS. of the celebrated Italian painter, sculptor and architect Leonardo da Vinci. Da Vinci was born in 1452 and died in 1519. His reputation as an artist is immortal but it is less generally known that he was well versed in music, military science, mechanics, hydraulics, astronomy, geometry, physics, natural history and anatomy. In several of these branches he made original investigations, anticipating later philosophers.

In a MS. quoted by Libri, da Vinci proposed a theory of vision which he seeks to explain by reference to the *camera obscura*. (Libri, III, 54 and 233). This takes the invention back into the 15th century—say 1490.

In a work published in 1521 by Cæsariano, a Milanese architect, he attributes the invention to a Benedictine monk, Dom Panunce, which is, however, regarded as doubtful. (Libri, IV, 303.)

Cardanus, an Italian physician, mathematician and author, also mentions the *camera obscura* in a treatise entitled "*De verum subtilitate*" published at Nuremberg in 1550.

All these references antedate John Baptist Porta's work, "*De Magia Naturalis*" of which the first edition appeared in 1553 when its precocious author was only 15 years of age. While Porta was not the inventor of the *camera obscura* in its simplest form, he has the honor of first employing a convex lens to perfect the images, and of placing transparent drawings opposite the opening. To these drawings he attached movable parts and thus produced astonishing effects which the unlearned ascribed to magic, a term connected with the lantern ever since.

Porta's *camera obscura* consisted of a simple box with a small opening at one side through which the rays of light entered and fell upon a white paper screen at the opposite side. The lens was subsequently inserted.

The difference between a dark chamber of this construction and a magic lantern is very slight, and consists chiefly in the relative position of parts and the source of illumination. By whom the great improvement was made, of substituting artificial light for sunlight in exhibiting transparent pictures, is unknown to the writer.

Deschales in his "*Mundus Mathematicus*" (Leyden 1674) states that a Dane, possibly the physician Thomas Bartholin, showed him in 1665 a lanterna magica having two convex lenses. (*Pogg. Gesch. Phys.*, p. 436.)

Athanasius Kircher, a learned Jesuit, Professor of Mathematics at the Collegio Romano (b. 1602, died 1680), in his second edition of "*Ars magna lucis et umbræ*," 1671, describes the magic lantern.

The oxy-hydrogen light now commonly used in connection with the exhibition of pictures by the lantern, was the invention of Thomas Drummond of the Royal Engineers (b. 1797, d. 1840), who employed it in 1824 in the trigonometrical survey of Ireland. The principle on which it is based had, however, been established in 1801, by Prof. Robert Hare of Philadelphia. To prevent explosions from the ignition of the mixed gases, Dr. Hare also applied the principle of Sir H. Davy's safety lamp, but this was not altogether satisfactory for it did not prevent some disastrous explosions. Later the so-called "safety-jet" was introduced, consisting of concentric tubes which prevent the gases, oxygen and hydrogen, from mingling previous to their issuing from the orifice. This invention is variously ascribed to Hemming, Maugham, and Daniell. The publication of the latter is dated 1833.

H. C. BOLTON, New York City.

**FOWL VOCABULARY.** The following domestic fowl vocabulary is very good, and will perhaps recall to the reader's mind a farm-yard picture :

Ur-ka-do-dle-do-oo. Challenge of male.

Tuck, tuck, tuck. Food-call of male.

R-a-r-r-ee. Announcing presence of hawk.

Cut-cut-ca-da-cut. Announcement of egg-laying.

Cluck, cluck cluck. Call of young.

Kerr, kerr, kerr. Song of contentment of hen.

C-r-a-w-z-ze. Quieting young chicks.

W-h-o-o-i-e (whistle). Expression of apprehension at night.

C-r-a-i-a-i-o-n. Terror and protest at capture.—*Wide Awake.*

### *Periodicity—Immortality.*

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The exposition of Dr. Slavonski's Periodicity in the February issue of *Notes and Queries* is very interesting and stimulating to thought. But I feel assured that there is a higher point of view than that employed by this renowned scientist; consequently that there are "missing links" in the system. If I rightly regard the conception of Dr. S. it makes matter, or material form, commanding in rule or authority, and life subordinate or dependent upon its mutations; whereas life is the ruler and material form the servant. Whether the form of matter operated by life be high or low; simple, complex, or composite; it is never wholly abandoned by life. If any special power of life abandons its form or vehicle as no longer useful—leaves it *dead* as to that special form—the great *over-soul* of life begins the work of decomposition as a process that shall make it the element to nurture and give form to other *definite* life-expression. Time and Space being the immeasurable continents, and material substance the equally immeasurable content of creative investiture, they can only be rightly estimated as they serve to inseminate, evolve and give organic expression to Creative Life which presides over and rules all in orderly providences. So, while these external instrumentalities are of much subordinate interest, inasmuch as they are to be ruled and converted in perfect efficiency and use to the fulness of Life in the Human form, they can never function to *constitute* immortal vitality, but can only minister to its immaculate powers in whatever relations and conditions such vitality may command. Immortality must be a *verity of Life*, and not a *pendant of matter*. Even continuous existence in spiritual form does not realize immortality; for immortality is quality and power in Supreme Life, and not mere spiritual continuity in immature personal expressions of life. Amplest conceptions of life will recognize its presence and power in all of its instrumental forms from the very lowest upward, but a valid conception of *Immortal* Life will never identify it with aught below Divine Supremacy in character and power: for the Divine alone hath immortality. To me a mathematical chase after immortality in the vortices and immeasurable changes of physical substance is futile in the extreme, for it is never to be found there. Only the Light of Supreme Life is adequate to solve the ultimate



problems of Life: and this, reflexly, is literally "the Light of the world."

Newness and ascension is the law in matter, because newness and ascension is the order of Life operating through matter.

I rejoice in the truth of Immortality for man, revealed as a state of Supreme Lordship without regard to time, space, or local state, for this, indeed, is the Light of Life, and at the same time the Light of the world.

But while I must not trespass further in these desultory strictures, let me formulate as concisely as possible, the order of

LIFE IN THE HUMAN-FORM.

In *Sub degree* it organizes corporeal sensibility, and at last perfects it.

In *Super degree* it organizes personal spirit and rational understanding, and finally perfects this form.

In *Supreme degree* it organizes the wisdom and power of Divine Natural Personality, and finally perfects it—realizes its fulness.

This threefold Personality matured constitutes, as I understand it, the Life and Light of Immortality revealed by Jesus Christ.

WILLIAM H. KIMBALL, Concord, N. H.

SONNET. The following appeared about thirty years ago, with no credit of authorship, in some of the leading literary journals of the country. Can any of your readers tell us of its paternity?

H., Manchester, N. H.

SONNET OF A YOUTH WHO DIED OF EXCESSIVE FRUIT-PIE.

Currants have checked the current of my blood,  
And berries brought me to be buried here;  
Pears have pared off my body's hardihood,  
And plums and plumbers spare not one so spare:  
Fain would I feign my fall; so fair a fare  
Lessens not fate, but 'tis a lesson good:  
Gilt will not long hide guilt; such thin-washed ware  
Wears quickly, and its rude touch soon is rued.  
Grave on my grave some sentence grave and terse,  
That lies not, as it lies upon my clay;  
But in a gentle strain of unstrained verse,  
Prays all to pity a poor patty's prey;  
Rehearses I was fruit-full to my hearse,  
Tells that my days are told, and soon I'm toll'd away!

**WARSAW—WARSAU.** (Vol. II, p. 543 ; III, p. 50.) I have been much interested in the scraps of information, derivation, and explanation of the almost endless variety of subjects discussed in your pages. I send a few geographical names observed in a half hour's study, and would like more light.

{ Warsaw is in New York and other States.  
 { Warsau is in Wisconsin.

{ Cheboygan is a town or city in the north of Michigan.  
 { Sheboygan is a town or city on the lake in Wisconsin.

{ LaCrosse is on the east of the Mississippi river.  
 { LaCrescent is on the west side nearly opposite.

{ Somerset is on the east side as above.  
 { Winterset is on the west side.

{ Winnepissiogee, a lake in New Hampshire.  
 { Winnepisgoosis, } lakes in Canada  
 { Winnipeg, }

{ Arthabasca, } both in Canada. { Lackawaxen, } Pennsylvania.  
 { Arthabaska, } { Lackawana, }

{ Spatsum } are both in Canada. { Norfolk is in Virginia.  
 { Spuzzum } { Suffolk is in North Carolina.

{ Essex is in Massachusetts. { Detroit is in Michigan.  
 { Sussex is in Virginia. { Gratiot is in Wisconsin.

{ Menominee is in Michigan. { Deux (two) Rivers, } Canada.  
 { Menomonee is in Wisconsin. { Three Rivers, }

SCHOOL BOY.

**TWO MORE ASTEROIDS DISCOVERED IN 1888.** (Vol. V, pp. 8-13.)  
 Asteroid No. 271 has been named Penthesilée.

No. 272 was discovered February 4, 1888, by Prof. Charlois of Naples, to be added to the list as Charlois<sup>2</sup>.

No. 273 was discovered March 8, 1888, by Prof. Pilasa, of Vienna, to be added to the list as Pilasa<sub>61</sub>.

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**ERRATA.** Vol. V, p. 6, second line from bottom, for "Virgin of Haran al Rasit," read Vizier of Haran al-Rasit.

Vol. V, p. 28, first line from top, for "capable," read incapable.

Vol. V, p. 39, first horizontal row, second square to the right, for "484," read 485. Same page, for "95" read 59, in the mixed number.

**DIES IRÆ.—NEW TRANSLATION.** I find in **NOTES AND QUERIES**, August, 1886, a memoranda about translations of *Dies Iræ*. I do not remember sending you a copy of Judge John S. Hager's translation of it, and have asked him to send one, which I presume he will do. I know something of the different versions of this magnificent old hymn, and I consider Judge Hager's the best one. The Judge is now collector of this port, and is a man of high position and character, and of much culture besides. This hymn is a fine instance of impossibility of translation. Take for example the stanza :

Tuba, mirum spargens sonum  
Per sepulchra regionum,  
Coget omne ante thronum.

The massive vowel sounds, in solid syllables, intrinsically proper to represent the great trumpet blasts, cannot be matched in English. The English sounds sizzle and squeak in comparison. The full voiced *oo* and *o* strike upon the ear with a boom that cannot be rendered by the English *e*, and *a*, and *i*. You could as well render a picture mainly of dark red, by a copy in full blue ; but our San Francisco Judge has done the best.

F. B. PERKINS, San Francisco, Cal.

*Dies Iræ*.—TRANSLATION BY JUDGE JOHN S. HAGER.

LATIN TEXT.	TRANSLATION.
Dies iræ, dies illa Solvat sæculum in favilla, Teste David cum Sibylla.	Day of wrath ! that day when burning Earth dissolves, to ashes turning ; Witness Psalm and Sibyl's warning.
Quantus tremor est futurus, Quando Juxta est venturus, Cuncta stricte discussurus.	O, the consternation pending ! God in judgment comes, descending, To arraign a world offending.
Tuba, mirum spargens sonum Per sepulchra regionum, Coget omnes ante thronum.	Trumpet's wondrous peal is falling, All the dead of ages calling, To the throne, in sounds appalling.
Mors stupebit, et natura, Quum resurget creatura, Judicant responsura.	Death and nature, stunned and quaking, See resurgent man awaking, While the day of doom is breaking.
Liber scriptus proferetur, In quo totum continetur, Unde mundus judicetur.	There the book divinely worded, Open lie- with all recorded : Whence the judgments are awarded.
Judex ergo cum sedebit, Quidquid latet apparebit, Nil inultum remanebit.	Lo ! the Judge the throne ascending ; Lo ! the veil of secrets rending : Naught is spared the vengeance pending.

Quid sum miser tunc dicturus,  
Quem patronem rogaturus,  
Quum vix justus sit securus ?

Rex tremendæ majestatis,  
Qui salvandos salvas gratis,  
Salva me, fons pietatis.

Recordare, Jesu pie,  
Quod sum causa tuæ viæ ;  
Ne me perdas illa die.

Quærens me, sedisti lassus,  
Redemisti, crucem passus  
Tantus labor non sit cassus.

Juste Judex ultionis,  
Donum fac remissionis  
Ante diem rationis.

Ingemisco tanquam reus,  
Culpa rubet vultus meus ;  
Supplici parce, Deus !

Qui Mariam absolvisti,  
Et latronem exaudisti,  
Mihi quoque spem dedisti.

Præces meæ non sunt dignæ,  
Sed tu bonus fac benigne,  
Ne perenni cremer igne.

Inter oves locum præsta,  
Et ab hædis me sequestra,  
Statuens in parte dextra.

Confutatis maledictis  
Flammis acribus addictis,  
Voca me cum benedictis.

Oro supplex et acclinis,  
Cor contritum quasi cinis ;  
Gere curam mei finis.

Lachrymosa dies illa !  
Qua resurget ex favilla,  
Judicandus homo reus :  
Huic ergo parce, Deus !

Oh, what then shall I be saying ;  
Whom invoke for aid while praying,  
When the just are fear betraying ?

King of majesty and splendor,  
Who dost free salvation tender,  
Mercy's source, be my defender.

Blesséd Jesus, my salvation  
Caused thy gracious visitation ;  
Leave me not to condemnation.

Tolling, weary, thou hast sought me,  
On the cross redemption brought me ;  
Be this hope not vainly taught me.

Holy Judge of retribution,  
Grant me saving absolution  
Ere the judgment distribution.

As in guilt I groan repenting,  
Sin in shame's red blush lamenting ;  
Save me God, be thou relenting.

Mary's sin thou saw'st condoning ;  
Thou did'st heed the robber's moaning,  
In my soul thus hope enthroning.

Prayers of mine are unavailing,  
But do thou with grace prevailing,  
Spare me endless fire and walling.

With the sheep from goats divided,  
Be for me a place provided,  
On thy right to safety guided.

When the wicked, headlong flying,  
Doomed to flames in woe are crying,  
Call thou me to joy undying.

Low in prayer before thee bending,  
Grief my contrite heart is rending ;  
Shield me when this life is ending.

Day of tears and lamentation,  
When from dust and earth's cremation  
Man shall rise : O God, prepare me  
For that judgment day, and spare me !

This hymn is sometimes called *Prosa de mortuis*, also *De die judicii*. The Germans call it *Gigantenhymnus*, ("the hymn of the giants.") It is used in the Latin Church on the day of All-Souls (November 2).

It is based upon Zeph. i, 15 : *Dies iræ, dies illa*, etc, as given in the Vulgate ; also other texts of Scripture the author had in view, Psalms xcvi, 13 ; xcvii, 3 ; cii, 26 ; whence David is introduced in the first stanza. II Peter iii, 7-11 ; in some versions of the hymn the name of Peter is used instead of David. The Sibyl referred to is supposed to be the Erythræan, the author of the VIIIth of the Sibylline Books, containing the famous acrostical lines on the judgment (N. AND Q. Vol. III, p. 137), IESOUS CHREISTOS THEOU UIOS SOTER. Virgil founds one of his Pastorals (Pollio vi) on these lines. Pope also reverts to it.

A bibliography of the translations of *Dies Iræ* is published in the "Bulletin" of Mercantile Library, Philadelphia, Vol. I, Nos. 9 and 10.

## QUESTIONS.

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1. Who was "King Ramirez," and what was the legend concerning him? "King Ramirez" is the subject of a striking painting, by one of the best known modern Spanish artists.

W. E. MOORE, Manchester, N. H.

2. Who was "Marechal Neil"? and why was the celebrated rose named for him?

W. E. MOORE.

3. Many persons whose ancestors came to America 150 to 200 years ago, speak of large inheritances due them in the land of their ancestors' nativity. As such instances, take the Jennings heirs of England, and the Graf heirs of Holland. Are these claims due to self deceptive vanity in general, or, is there any basis for the claims. What is the law of limitation as to time regarding these claims.

I. B.

4. What is the origin of the expression, "Sound on the goose question"?

A. HAMILTON, Toronto, Can.

5. Whose last dying words are the following quotations.

(a) "Adieu, my dear Morand. I am dying."

(b) "He is the kindest, best man in the world." (Referring to her husband).

(c) "The South! The Poor South! God knows what will become of her!"

(d) "Jesus." (Tracing a cross with his blood, and kissing it).

(e) "Oh Lord God Almighty, as thou wilt."

(f) "Dei me nun katheudin." (The dying man was not a Greek, but deceased in the present century).

R., JUNIOR, Boston, Mass.

6. When was Fort Ticonderoga built, and by whom?

S. F. C., JUNIOR.

7. In Mansfield Merriman's bibliography of writings relating to "The Method of Least Squares," p. 224, quoting from Galton "on Statistics by Intercomparison," he says the equation: " $y = ce^{-h^2x^2}$ " is called an *ogive*, and the curve is regarded as more likely to be approximately true of a statistical series than any other that can be specified *apriori*." What is the shape of the "ogive"? TYRO.

7. "Or those eighteen upon whom the tower in Siloam fell, and slew them."—*Luke* XIII, 4. Where can be found an account of the catastrophe referred to and the names of the "eighteen slain"?

STUDENT.

8. What gave the name *ampersand* (&) to the body of water in the Adirondacks called "Lake Ampersand"?

JONATHAN.

1. What is the shape of the solid called "a circular groin," mentioned by Docharty, page 291, "Analytical Geometry and Calculus" ?  
TYRO.

2. Please explain the word *Deucalion* as applied to a flood, *i. e.* "Deucalion's Flood." Does it mean the "second deluge"? as Deuteronomy, "the second law;" deuterogamy, "the second marriage"?  
LEWIS G. HOLDEN.

3. Where can be found an account of "The Wandering Jew"? Some writers refer to John the Apostle as being the man, from the text of John XXI, 22. Others say it is Ahasuerus, before whose door Jesus halted to rest when bearing his cross to Golgotha, Jesus saying, "I shall stand and rest, but thou shall go till the last day," this being a reply to the Jew's request to Jesus to "move on."

WELLINGTON HOWARD.

4. Where can be found the legend of the Ass's broken leg, referring to the miracle performed by Jesus making whole the leg when he rode into Jerusalem.

WELLINGTON HOWARD.

5. In Abraham Cole's "Latin Hymns, with original translations," the second stanza of *Stabat Mater*, has these two lines :

" O how mournful and distressed  
Was that favored and most blessed  
Mother of the Only Son ! "

The grave accent (è) is used in the terminal of the first two lines.

Other writers in these and similar words use the acute accent (é). Which is the correct accent ?

X. Y. Z.

6. What is the origin of, or legend, connected with the words "Kyrie eleeson," (Lord, have mercy upon us)?

X. Y. Z.

7. Some philosopher a few years ago published his theory that the earth is "lopsided," with other claimed novel discoveries. Where can the account be found, or who can explain his theory?

ANDREW SMITH.

8. What is the history and religious veneration connected with the well *Zem Zem* often mentioned by Mohammedan writers.

J. PAYSON SHIELDS.

9. In the Apocrypha, Book of II Esdras VI, 49, we read this :

" Then didst thou ordain two living creatures, the one thou calledst Enoch and the other Leviathan."

What animal is meant by the *Enoch*? Does it mean the *Behemoth*, mentioned in Job XL, 15; with Leviathan, Job XLI, 1; Ps. CIV, 126? Why did Thomas Hobbes of Malmesbury call some of his books Volume VI, *Leviathan*; Volume XIII, *Behemoth*?

'OMERUS.

## *Expressions for the Area of a Plane Triangle.*

By B. F. Burleson, Oneida Castle, N. Y.

In April, 1883, Mr. James Main, formerly of the U. S. Coast and Geodetic Survey, published in the *Mathematical Magazine*\* forty-six formulæ expressing the area of a plane triangle. This collection was classified and reprinted with one additional formula by M. Ed. Lucas in *Mathesis*†. It was also copied into the Danish mathematical journal, *Tidsskrift for Mathematik*.‡ In 1885, Mr. Marcus Baker, of the U. S. Coast and Geodetic Survey, published in the *Annals of Mathematics*,§ after its reading before the mathematical section of the Philosophical Society of Washington, D. C., a still larger collection of such expressions. He gave 288 formulæ classified under 6 groups, as follows :

Group I contained formulæ which Mr. Lucas styled unique, that is, those in which all similar elements of the triangle entered. Hence, they do not admit of similar formulæ by permutating the letters.

Group II contained formulæ which admit of two similar expressions, giving three of a kind by permutation.

Group III contained formulæ which admit of three similar expressions, giving four of a kind by permutation.

Group IV contained formulæ which admit of five similar expressions, giving six of a kind by permutation.

Group V contained one formula which admits of eleven similar expressions, giving twelve of a kind by permutation.

### SUMMARY.

Group I	31	formulæ.	By permutation, 31
Group II	41	"	" " 123
Group III	11	"	" " 44
Group IV	10	"	" " 60
Group V	1	"	" " 12
Miscellaneous	16	"	" " 18
Total,	110		288

Each group was subdivided into two parts, the first not containing, and the second containing trigonometric functions of the angles.

In 1886, the Parisian *Journal de Mathématiques*,|| published, in con-

\* The *Mathematical Magazine*, edited and published by Artemas Martin, Erie, Pa. 1883, April, Vol. I, No. 6, pp. 94-95.

† *Mathesis*. Publié par P. Mansion et J. Neuberg, Gand, 1883, Juin, Vol. III, pp. 136-138, 167-170.

‡ *Tidsskrift for Mathematik* Udgivet af J. P. Gram og H. G. Zeuthen, Kjøbenhavn, 1883, Vol. 5th, series first year, No. 3, pp. 82-84; No. 4, p. 186.

§ *Annals of Mathematics*, edited by O. Stone and W. H. Thornton, Charlottesville, Va., 1885. January, Vol. I, No. 6, pp. 134-138; Vol. II, No. 1, pp. 11-18.

|| *Journal De Mathématiques*, published by M. Henry Vuibert, Paris, 1886. Février, No. 10, pp. 76-80.

nection with a large collection of formulæ appertaining to the triangle, 50 unclassified expressions for the area of the triangle, many of which were different from any previously given.

The number of such possible expressions for the area of the triangle is obviously very great. Were it of practical moment the possible number might be determined in accordance with the elements assumed of the triangle. We think that the various trigonometrical functions of the angles constitute not one, but many elements of the triangle.

The formulæ in NOTES AND QUERIES, Vol. V, pp. 17-19, will be found useful in finding various expressions for the area of a triangle as well as for other purposes. A few of these formulæ the writer has discovered, since their publication, are erroneous. Those that were found to be wrong we here append in accurate terms.

$$32. \quad P_a P_b + P_a P_c + P_b P_c = st^2 \div 4n.$$

$$33. \quad P_a P_b P_c = t^3 \div 8n.$$

$$34. \quad m_a^2 + m_b^2 + m_c^2 = (3s^2 - 6m) \div 4.$$

$$35. \quad m_a^2 m_b^2 + m_a^2 m_c^2 + m_b^2 m_c^2 = (9m^2 - 18sn) \div 16.$$

$$36. \quad m_a^4 + m_b^4 + m_c^4 = (9s^4 - 36s^2m + 36sn + 18m^2) \div 16.$$

$$42. \quad \cos A \cos B \cos C = (s^4 t^2 - 8snt^2 - t^4 - 16s^2 n^2) \div 16s^2 n^2.$$

$$48. \quad \cos^2 A + \cos^2 B + \cos^2 C = (24s^2 n^2 + 8snt^2 + t^4 - s^4 t^2) \div 8s^2 n^2.$$

$$50. \quad \cos 2A + \cos 2B + \cos 2C = (12s^2 n^2 + 8snt^2 + t^4 - s^4 t^2) \div 4s^2 n^2.$$

By the aid of these formulæ we have found over 30 new expressions for the area of a triangle not found in any of the collections referred to. We append them without classification. We think they may all properly be placed under Mr. Baker's Group I. Had we the time at our disposal, and space were permitted, we are confident we could extend the list to several hundred. We leave to the reader the pleasant task of lengthening the roll of the expressions, for himself.

$$\Delta =$$

$$1. \quad \frac{1}{4} \sqrt{[4(a+b+c)(a^2b+b^2c+a^2c+ab^2+bc^2+ac^2+abc) - (a+b+c)^4]}$$

$$2. \quad abc P_a P_b P_c \div 8rr_a r_b r_c.$$

$$3. \quad 4Rrr_a r_b r_c \div abc.$$

$$4. \quad \frac{1}{2}(a+b+c)(r_a+r_b+r_c-4R).$$

$$5. \quad \frac{1}{4}(a+b+c)(r+r_a+r_b+r_c-4R).$$

$$6. \quad (a+b+c) P_a P_b P_c \div 2(P_a P_b + P_a P_c + P_b P_c).$$

$$7. \quad \frac{1}{4} \sqrt{[abc(P_a P_b + P_a P_c + P_b P_c)] \div \sqrt{(a+b+c)}}.$$



8.  $abc(m_a^2 m_b^2 + m_a^2 m_c^2 + m_b^2 m_c^2) \div 9R^3(P_a^2 + P_b^2 + P_c^2).$
9.  $\sqrt{[P_a P_b P_c (3r_a r_b + 3r_a r_c + 3r_b r_c - m_a^2 - m_b^2 - m_c^2)]} \div \sqrt{6(P_a + P_b + P_c)}.$
10.  $abc(P_a + P_b + P_c) \div 2(ab + ac + bc).$
11.  $abcR(P_a^2 + P_b^2 + P_c^2) \div (a^2 b^2 + a^2 c^2 + b^2 c^2).$
12.  $(r_a r_b + r_a r_c + r_b r_c) \tan \frac{1}{2} A \tan \frac{1}{2} B \tan \frac{1}{2} C.$
13.  $\frac{1}{2} R(a + b + c) (\cos A + \cos B + \cos C - 1).$
14.  $(a + b + c) (ab + ac + bc) (\sin \frac{1}{2} A \sin \frac{1}{2} B \sin \frac{1}{2} C) \div (P_a + P_b + P_c).$
15.  $\sqrt{[abc r (\sin 2A + \sin 2B + \sin 2C)]} \div \sqrt{(32 \sin \frac{1}{2} A \sin \frac{1}{2} B \sin \frac{1}{2} C)}$
16.  $abc \sin A \sin B \sin C \div 4(a + b + c) (\sin \frac{1}{2} A \sin \frac{1}{2} B \sin \frac{1}{2} C).$
17.  $P_a P_b P_c \div 4(a + b + c) \sin \frac{1}{2} A \sin \frac{1}{2} B \sin \frac{1}{2} C.$
18.  $4R^2 r (1 + \cos A) (1 + \cos B) (1 + \cos C) \div (a + b + c).$
19.  $\sqrt{P_a P_b P_c (a + b + c)} \div 2\sqrt{(\sin A + \sin B + \sin C)}.$
20.  $2R(a + b + c) (\sin \frac{1}{2} A \sin \frac{1}{2} B \sin \frac{1}{2} C).$
21.  $(a + b + c)^2 (\sin A \sin B \sin C) \div 2(\sin A + \sin B + \sin C)^2.$
22.  $abc(\sin A \sin B \sin C) \div (a \cos A + b \cos B + c \cos C).$
23.  $(a^2 + b^2 + c^2) (\sin A \sin B \sin C) \div 2(\sin^2 A + \sin^2 B + \sin^2 C).$
24.  $abc\sqrt{(\cos A \cos B \cos C + 1)} \div \sqrt{(2a^2 + 2b^2 + 2c^2)}.$
25.  $abc(\sin A \sin B + \sin A \sin C + \sin B \sin C) \div 2(P_a + P_b + P_c).$
26.  $2RR_1 r (a + b + c) (3 - \cos 2A - \cos 2B - \cos 2C) \div (a^2 + b^2 + c^2).$
27.  $\frac{1}{2} R \sqrt[3]{[2P_a P_b P_c (\sin 2A + \sin 2B + \sin 2C)]}.$
28.  $r_a r_b r_c (\tan \frac{1}{2} A + \tan \frac{1}{2} B + \tan \frac{1}{2} C) \div (r_a + r_b + r_c).$
29.  $R^2 (3 - \cos^2 A - \cos^2 B - \cos^2 C) \div (\cot A + \cot B + \cot C).$
30.  $2r^3 \cot^2 \frac{1}{2} A \cot^2 \frac{1}{2} B \cot^2 \frac{1}{2} C \div (a + b + c).$
31.  $4Rr^2 (\frac{1}{2} \cos^2 \frac{1}{2} A + \frac{1}{2} \cos^2 \frac{1}{2} B + \frac{1}{2} \cos^2 \frac{1}{2} C).$
32.  $r(r_a + r_b + r_c) \div 4R(\frac{1}{2} \sin^2 \frac{1}{2} A + \frac{1}{2} \sin^2 \frac{1}{2} B + \frac{1}{2} \sin^2 \frac{1}{2} C).$

BEN. FRANKLIN'S LETTER TO MR. STRAHAN. Abram Hall of West Chester, Pa., possesses an interesting relic of Benjamin Franklin, in the shape of a letter written by him to a member of the British Parliament. Mr. Hall found the letter several years ago among a lot of waste paper. It reads as follows :

PHILADELPHIA, July 5, 1775.

*Mr. Strahan.* You are a member of Parliament, and one of that majority which has doomed my country to destruction. You have begun to burn our town and murder our people. Look upon your hands. They are stained with the blood of your relations. You and I were long friends. You are now my enemy, and I am yours.

B. FRANKLIN.









MISCELLANEOUS  
NOTES AND QUERIES,  
WITH ANSWERS.

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*He who "lived long ago, in the morning of the world, when earth was nearer heaven than now."* — BROWNING.

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"PERIODICITY." BY DR. IVAN SLAVONSKI. (Vol. V, p. 25).

1. The discussion on permutations and combinations is rather elementary ; but there is no harm in it.

2. The statement that motion is inherent in matter is sound and good, and needs to be taught.

3. (Line 1, p. 28) : "An atom is capable of being divided." The word should be "*incapable*." This is a vexatious error. The etymology of "atom" shows its meaning. It is, if literally translated, "uncut"—that is, undivided, and indivisible, and the rest of the discussion requires "*incapable*" instead of "*capable*."

4. (That the number of atoms is limited.) This is not so easily shown, unless it can be shown that space is limited. But so far as we know, and according to the accepted views of scientists, space is filled with atoms ; and a limit to space is unthinkable. You can not conceive of yourself going away in a right line in any direction and coming to a point beyond which there is no space. Therefore, you can not conceive of any boundary to space, that is, to the place in which atoms are. That is, you can not conceive of any limit to the number of atoms. That is, the number of atoms is infinite to minds constituted as ours are.

5. "To speak of an unlimited number is to be unintelligible." Very true, and so it is to speak of unlimited space, but as I have just shown, we *must* conceive of space as unlimited, and so we must of

the number of atoms. The fact that we do not comprehend infinity does not hinder us from conceiving it.

6. This reasoning of course destroys Dr. Slavonski's conclusions about the universe coming around again to exactly the state in which it is now.

7. But besides, there is a difficulty about the doctor's conception of immortality. He gives this name to a repetition, at enormous distance of time, of a relatively short period and phase of existence, without any consciousness in the individual of this repetition. But it will be found on examination that immortality in the accepted sense of the term is said of one and the same personality, continuous and conscious. There is no propriety in applying the term to two or more similar but not identical existences which take place at remotely distant times. The person who is immortal in this new way can know nothing of his immortality, and nobody else can know anything of it. No doubt it is possible to conceive of such a mode of existence ; but it is not immortality in any received sense of the term.

Lastly. These objections are altogether different from those stated on your p. 31. PRIGGLES.



"KYRIE ELEESON." (Vol. V, p. 72.) George Sale says, in the "Introduction to the Korân," that the Jews of Hamyar challenged some neighboring Christians to a public disputation, which was held for three days before the king and his nobility and all the people, the disputants being Gregentius, bishop of Tephra (which he takes to be Dhafâr) for the Christians, and Herbanus for the Jews. On the third day, Herbanus, to end the dispute, demanded that Jesus of Nazareth, if he was really living and in heaven, and could hear the prayers of his worshippers, should appear from heaven in their sight, and they would then believe in him, the Jews crying out at the same time, "Show us your Christ, alas ! and we will become Christians." Whereupon, after a terrible storm of thunder and lightning, Jesus Christ appeared in the air, surrounded with rays of glory, walking on a purple cloud, having a sword in his hand, and a diadem on his head, and spake these words over the head of the assembly : "Behold, I appear to you in your sight, I who was crucified by your fathers." After which the cloud received him out of their sight. The Christians then cried out, "Kyrie eleeson" (Lord, have mercy upon us). The Jews, the account says, were stricken blind and recovered not till they were all baptised.

**MANUFACTURING—MANCHESTER, N. H.** Who originated the manufacturing enterprises in Manchester, N. H. ? G.

From the work of "The Stickney Family, a Genealogical Memoir," by Matthew A. Stickney, Salem, Mass., 1869, page 270, we find it stated that Thomas Stickney, born in Haverhill, Aug. 1, 1777, died in Boston, July 13, 1814. He was a student at Leicester Academy, and in common with his brothers, his father proposed to give him a collegiate education, but he preferred the pursuits of active business. After his marriage he was engaged in business in Boston, but on the death of his grandfather, the Hon. Samuel Blodget, at Manchester, N. H., in 1807, he went to Manchester (then Derryfield), and became either the owner of, or largely interested in the Blodget Estate and Canals at that place. He originated the first manufacturing enterprise other than Blodget's Saw Mills, on the Manchester side of the river, and at a town meeting, held in 1810, was appointed chairman of a committee to procure a change of name for the town. [See Potter's "History of Manchester."] He was accustomed to remark that Amoskeag would be the future "Manchester of America," and his sanguine anticipations in regard to the growth of the manufacturing interests there led to the adoption of "Manchester" as the name of the town. He was a man of cheerful disposition and courteous manner, of sanguine temperament and great energy of character. Had his life been spared he might have realized for himself and family the advantages that had been anticipated from his grandfather Blodget's important interests at Amoskeag Falls, but his health was declining during the last year of his life, and he died at Boston, July 13, 1814, and was buried there in the Granary Burial Ground.

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#### HOW THE ENGLISH KEEP CHRISTMAS.

O plethora of beef and bliss !  
 Monkish feaster, sly of kiss !  
 Southern soul in body Dutch !  
 Glorious time of great Too-Much !  
 Too much heat, and too much noise,  
 Too much babblement of boys ;  
 Too much eating, too much drinking  
 Too much ev'rything but thinking.  
 Solely bent to laugh and stuff,  
 And trample upon Good-Enough.  
 Oh, right is thy instinctive praise  
 Of the wealth of Nature's ways !  
 Right thy most unthrifty glee,  
 And plous thy mince-piety !



## *VOLAPÜK—The Universal Language.*

The article on Volapük in the March No. 1888 (N. AND Q.), has produced quite an interest in the subject of a universal language, and a call for more on the subject, with examples of elucidation. While we have not room to publish the entire construction of it, which can be learned from elementary grammars on the same, we will give a few more illustrations of this, with some from other systems which have been proposed for a world-speech. The pronunciation of the vowels and consonants in the Volapük system are as follows :

VOWELS.		CONSONANTS.	
a	as in <i>father</i> .	c	sounds like j in <i>judge</i> .
ä	as in <i>care</i> .	g	sounds like g in <i>God</i> .
e	as in <i>they</i> .	j	sounds like sh in <i>shade</i> .
i	as in <i>machine</i> .	y	sounds like y in <i>yes</i> .
o	as in <i>stone</i> .	z	sounds like ts in <i>cats</i> .
ö	as in <i>word</i> .	All other consonants, as in English. There is no x nor w.	
u	as in <i>rude</i> .		
ü	as in <i>bureau</i> (French).		

### LEADING COUNTRIES OF THE WORLD.

Africa,	Fikop.	China,	Lusän.
America,	Melop.	England,	Nelij.
Asia,	Sikop.	Europe,	Yulop.
Australia,	Talop.	France,	Flent.
Austria,	Löstakin.	Germany,	Deut.
Bavaria,	Bayän.	Holland,	Nedän.
Belgium,	Beljän.	Italy,	Täl.
Canada,	Kanadän.	United States,	Pebaltats.

### MONTHS OF THE YEAR.

January,	Balul or Yanul.	July,	Velul or Yulul.
February,	Telul or Febul.	August,	Jölul or Gustul.
March,	Kilul or Mäzul.	September,	Zülul or Setul
April,	Folul or Apul.	October,	Balsul or Otul.
May,	Lulul or Mayul.	November,	Babul or Novul.
June,	Mälul or Yunul.	December,	Batul or Dekul.

### DAYS OF THE WEEK.

Sunday,	Sodel.	Thursday,	Dödel.
Monday,	Mundel.	Friday,	Flidel.
Tuesday,	Tusdel.	Saturday,	Zädel.
Wednesday,	Vesdel.		

THE TONAL SYSTEM, by John W. Nystrom, was published in 1862, (octavo, pp. 106, Philadelphia), introducing a *tonal* system of calculation, of sixteen for a base. The tonal names of the single figures are Noll, 0 ; An, 1 ; De, 2 ; Ti, 3 ; Go, 4 ; Su, 5 ; By, 6 ; Ra, 7 ; Me, 8 ; Ni, 9 ; Ko, 9 ; Hu, 6 ; Vy, 8 ; La, 8 ; Po, 8 ; Fy, 8 ; Ton, 10.

## SIXTEEN MONTHS IN A YEAR.

21 December,	Anuary.	21 June,	Nictorary.
13 January,	Debrian.	14 July,	Kolumbian.
4 February,	Timander.	6 August,	Husamber.
27 February,	Gostos.	29 August,	Vyctorius.
21 March,	Suvenary.	21 September,	Lamboary.
13 April,	Bylian.	13 October,	Polian.
6 May,	Ratamber.	5 November,	Fylander.
29 May,	Mesudius.	28 November,	Tonborius.

**Mr. Nystrom makes 16£ tonal days in a year, and 168 in a leap years. He divides the year into 16 months, of 22 and 23 days each; Debrian to have an additional day in leap years; the equinoxes commencing with Suvenary and Lamboary, and the solstices commencing with Anuary and Nictoary.**

**VISIBLE SPEECH**, by Alexander Melville Bell, published his work in 1867, (quarto, pp. 126, xvi plates), London. He calls it the Science of Universal Alphabetics, or self-interpreting physiological letters for the writing of all languages in one alphabet. The alphabetic characters are all new, their forms being based on the position of the tongue, mouth, etc. The words **VISIBLE SPEECH** resembles very much this:

$$3 \int \Omega \, d\omega + 8 \int \omega = 0.$$

Mr. Bell, in an article in *The Voice*, March, 1888, p. 42, taken from *Science*, says that Volapük will naturally meet with acceptance in such countries which possess inflected languages, but will not be acceptable to English-speaking people. He proposes a committee, one English and one American member, to remove the anomalies from Volapük and create a "world-language."

**ALWATO**, by Stephen Pearl Andrews, was published to the world in "Universology," 1872, octavo. Later, in 1877, he published "The Primary Grammar of Alwato (*Ahl-wah-to*), the new scientific universal language." The following are examples :

Ci, 1 ; Twi, 2 ; Tri, 3 ; Kwi, 4 ; Kwin, 5 ; Tritri, 6 ; Tritrin, 7 ; Kwikwi, 8 ; Kwikwin, 9 ; Tinti, 10 ; Tinci, 11 ; Tintwi, 12.

VISONA, by Arthur Merton (Sivarttha), was developed by the author in 1870, and has been published in Chicago by the School of Culture. Visona is a universal language based on natural laws. It is based on unity as a center, called Mastona or Omniverse, and from this grows the stem words. The circle illustrating it includes five series, containing 144 words. For each of these words there is a new word of two letters, and these are the stem-words of the entire language. There are 36 postfixes for attached syllables, and the words are self-defining. The first 8000 words are produced by 240 syllables. Thus in Visona the noun for organizing is *Su*. Then we have :

Noun,	organizing,	<i>su</i> .	Verb,	organizing,	<i>arsu</i> .
Adjective,	organic,	<i>ālsu</i> .	Negative,	not organizing,	<i>st̄karsu</i> .
Adverb,	organically,	<i>ānsu</i> .	Passive,	being organized,	<i>ēkarsu</i> .

The author claims it is twenty times easier to learn than English, French, or German. It leads to the classification of every branch of knowledge. The visonal word have no more than three syllables of six letters each. It is far more uniform than Volapük, and can be memorized much easier.

"ENOCH," OR "TRAINUP"? We read in the authorized version Proverbs XXII, 6, this: "Train up a child in the way he should go."

There is another translation of this verse which, we are told, the original language will bear, as follows :

*"Enoch hath been made into a boy, according to his path."*

Will some of your linguistic readers give a literal translation, and state if the original word CHNVK can be vocalized as Chanokh (Enoch), or should CHNVK be vocalized as Chanekh ("to instruct," "to train up")? If it will bear the italicized rendering, does it imply that Enoch was re-incarnated without experiencing death?

FIDES.

3. We are informed that there is only four recorded instances that "Jesus wept," namely :

1. At the grave of Lazarus (John XI, 35).
2. In the garden of Gethsemane (Matt. XXVI, 38 ; Mark XIV, 34).
3. Over Jerusalem (Matt. XXIII, 37 ; Luke XIII, 34).
4. On the Cross (Matt. XXVII, 46 ; Mark XIV, 34).

Is there record, canonical or apocryphal, that he ever laughed?

ROBERT RAIKE

**OLD PARR'S LAST WILL AND TESTAMENT.** Almost singular document was brought to light, a number of years ago, written by the celebrated Old Parr who attained the almost incredible age of 152 years. It is written on parchment, and although upwards of 200 years of age, is in an excellent state of preservation. The following is an extract :

"These do certifie yt ye undermentioned is ye method of preserving health, which by ye grace of Almighty God, has caused me to attain to my miraculous old age. Albeit in my youth I was afflicted with ye bloody flux and King's Evil, but which all have left me by using some days ye herbs as herein written."

Then follows the receipt.

"Moreover, I bequeath to my second Great Grandson ye method I employ for preparing ye medicament. Given this day, and in ye 147th year of my age. THOMAS PARR.

*Winnington, Salop, January 17, 1630."*

Thomas Parr was born 1483, and died 1635. This singular man, with one exception, is the oldest man that England ever produced. His biographer says : "He married his first wife at the age of 88 ; and he again married at the amazing age of 120 ; at 130 he used to thrash corn, and to do any laborious work. He had seen ten Kings and Queens of England.

**QUEER NAMES.** A woman who has been indexing deeds in Maine has made a list of the queer given names she found. Here are some of them : Ledoc, Generous, Passchal, Lupina, Mighil, Araunah, Squire, Deluva, Barzillai, Calvary, Hartson, Zophau, Philander, Mories Axiel, Hopestill, Piram, Jerathmael, Rancil, Hazareman, Sprout, Demeric, Bana, Angler, Uzza, Lilia, Cad, Luton, Cyprian, Ivory, Jacon, Kilah, Orra, Cadwallader, Galon, Loven, Diodamia, Grinfil, Mesbach, Liberty, Autumers, Haddassah Esek, Sahra, and Rispah.

**A GOOSE-HARE SWAN.** Recently a swan was cooked strictly according to the metrical recipe in Yarrell's "History of British Birds," and the dish is described as tasting something between a goose and a hare. The recipe for this dish is as follows :

Take three pounds of beef, beat fine in a mortar,  
Put into the swan — that is, when you've caught her ;  
Some pepper, salt, mace, some nutmeg, an onion  
Will heighten the flavor in gourmands' opinion.  
Then tie it up tight with a small piece of tape,  
That the gravy and other things may not escape ;  
A meal paste, rather stiff, should be laid on the breast,  
And some whity-brown paper should cover the rest.  
Fifteen minutes at least ere the swan you take down,  
Pull the paste off the bird that the breast may get brown.  
To a gravy of beef, good and strong, I opine,  
You'll be right if you add half a pint of port wine ;  
Pour this through the swan, yes, quite through the belly,  
And serve the whole up with some hot currant jelly.  
N. B.—The swan must not be skinned.

*Common Names of Chemical Substances.*

Common Name.	Chemical Name.
Aqua Fortis.....	Nitric Acid.
Aqua Regia.....	Nitro-Muriatic Acid.
Blue Vitriol.....	Sulphate of Copper.
Cream of Tartar.....	Bitartrate of Potassium.
Calomel.....	Chloride of Mercury.
Chalk.....	Carbonate Calcium.
Caustic Potassa.....	Hydrate Potassium.
Chloroform.....	Chloride of Gormyle.
Common Salt.....	Chloride of Sodium.
Copperas, or Green Vitriol.....	Sulphate of Iron.
Corrosive Sublimate.....	Bi-Chloride of Mercury.
Dry Alum.....	Sulphate Alluminum & Potassium.
Epsom Salts.....	Sulphate of Magnesia.
Ethiops Mineral.....	Black Sulphide of Mercury.
Fire Damp.....	Light Carburetted Hydrogen.
Galena.....	Sulphide of Lead.
Glauber's-Salt.....	Sulphate of Sodium.
Glucose.....	Grape Sugar.
Iron Pyrites.....	Bi-Sulphide of Iron.
Jeweler's Putty.....	Oxide of Tin.
Laughing Gas.....	Protoxide of Nitrogen.
Lime.....	Oxide of Calcium.
Mosaic Gold.....	Bi-Sulphide of Tin.
Muriate of Lime.....	Chloride of Calcium.
Nitre of Saltpetre.....	Nitrate of Potash.
Oil of Vitriol.....	Sulphuric Acid.
Potash.....	Oxide of Potassium.
Red Lead.....	Oxide of Lead.
Salmoniac.....	Muriate of Ammonia.
Slacked Lime.....	Hydrate Calcium.
Soda.....	Oxide of Sodium.
Spirits of Hartshorn.....	Ammonia.
Spirit of Salt.....	Hydro-chloric, or Muriatic Acid.
Stucco, or Plaster of Paris.....	Sulphate of Lime.
Sugar of Lead.....	Acetate of Lead.
Verdigris.....	Basic Acetate of Copper.
Vermilion.....	Sulphide of Mercury.
Volatile Alkali.....	Ammonia.
White Vitriol.....	Sulphate of Zinc.

**MOTION OF A CARRIAGE WHEEL.** The old question as to whether the upper part of a carriage wheel in motion goes along faster than the lower part seems to have been settled by instantaneous photography which givee the top spokes indistinct, and the bottom distinct.

**A FEW DEFINITIONS.** *Definition.* A definition is the resolution of a complex idea into the simple elements which compose it.

*Boil.* A diminutive circumscribed subcutaneous eruption characterized by a pointed pustular tumor and suppurating around a central core.—*Johnson.*

*Dandy.* In modern usage, a male of the human species who dresses himself like a doll and who carries his character on his back. — *Webster's First Edition.*

*Excise.* A hateful tax levied upon commodities and adjudged not by the common judges of property, but by *wretches* hired by those to whom excise is paid.—*Johnson.*

*Garret.* A room on the highest floor of the house; *Cock-loft*, the room over the garret.—*Johnson.*

*Generous.* In modern usage, a generous person is one who gives away useless articles he is anxious to get rid of.

*Gentility.* A servant who prided herself of having always lived with genteel families, was asked the meaning of the term; "where they drink a great deal of wine, keep late hours, and the gentlemen gamble and swear," she explained.

*Gentry.* In conversation with an American, an Englishman defined "the gentry" as those who never had done any work, nor their fathers before them. The American retorted: "We have that class in the United States, but call them tramps."

*Journalist.* A grumbler, a censorer, a giver of advice, a regent of sovereigns, a tutor of nations.—*Napoleon Bonaparte.*

*Martial bearing.* A constable in Delhi arrested some deserters. and explained to the magistrate that he recognized them by their martial bearing. "What do you mean by martial bearing?" asked His Honor. "Why, the men were very free with their money, were drunk, swore a great deal, and wanted to fight," explained the knowing officer of the peace.

*Network.* Anything reticulated or decussated at equal distances with interstices between the intersections.—*Johnson.*

*Oats.* A grain which in England is generally given to horses, but in Scotland supports the people.—*Johnson.*

*Pathology.* The art of road-making.

*Pension.* An allowance made to any one without an equivalent. In England it is generally understood to mean pay given to a state hireling for treason to his country.—*Johnson.*

*Pensioner.* A slave of state hired for a stipend to obey his master. [Johnson published his Dictionary in 1755. In 1762, with character-

istic defiance of Mrs. Grundy, he accepted a pension of £300 *per annum* as a "reward of literary merit!" ]

*Tory.* A cant term, derived, I suppose, from an Irish word signifying a savage. One who adheres to the ancient constitution of the state and the apostolic hierarchy of the church of England ; opposed to a whig.—*Johnson.*

*Whig.* The name of a faction.—*Johnson.*

*Window.* An orifice in an edifice for the intromission of illumination. (Johnson, modified). DJAFAR.

MONUMENT to HANK MONK. The citizens of Nevada are raising money for a monument to Hank Monk, the famous stage driver, whose body lies in a lonely defile in the Colorado mountains, near the Clear Creek road. The monument will bear these words :

HANK MONK .  
THE WHITEST, BIGGEST HEARTED AND BEST KNOWN  
STAGE DRIVER OF THE WEST  
WHO WAS KIND TO ALL AND THOUGHT ILL  
OF NONE.  
HE LIVED IN A STRANGE ERA  
AND WAS A HERO  
AND THE WHEELS OF HIS COACH ARE NOW  
RINGING ON GOLDEN STREETS.

IS THIS PLANET LOPSIDED ? (Vol. V, p. 72.) A correspondent of the New York *Sun*, wrote to that paper a few years ago, from Baldwin, Wisconsin, stating that the southern hemisphere of our earth is denser than its northern ; or, what is the same thing, the center of gravity is situated in a plane passing through the earth south of the equator. From this he deduced the consequences :

1. This is the cause of the inclination of the equinoctial to the ecliptic, and consequently the change of the seasons.
2. It is the cause of the deviation of the magnetic meridian. Let us demonstrate by an experiment. In case the theory is true, a stone let fall from a tower north of the equator would fall in a southerly direction and at the same latitude south of the equator would fall due east. At the equator a stone let fall from a tower would fall in a more southerly direction than farther north of the equator.
3. If true, the earth should contain the greatest ocean on its southern hemisphere.
4. If true, the velocity of the moon in its orbit should be slightly greater when south of the equinoctial, than when north of it.

## *QUESTIONS AND ANSWERS.*

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**THE LEGEND OF EUCLID.** Where can be found what is known as "The Legend of Euclid" ? I find him referred to in the legend as "Worthy Clarke Ewvclyde." HIERONYMOUS.

Nearly all the old manuscript constitutions in the Masonic archives contain what is known as the Legend of Euclid, whose name is presented as the Worthy Clerk. It has come down to us in several forms, no doubt corruptions of some early traditions. The so-called Dowland manuscript has the form as here given. It has the appearance of having been written in the 17th century, but it is believed to be only a copy, clothed in more intelligible language, of an early manuscript of the year 1530. It is as follows :

"Moreover, when Abraham and Sara his wife went into Egypt, there he taught the Seaven Sciences to the Egyptians ; and he had a worthy Scoller that height Ewvclyde, and he learned right well, and was a master of all the vij Sciences liberall. And in his dayes it befell that the lord and the estates of the realme had soe many sonnes that they had gotten some by their wives and some by other ladyes of the realme ; for that land is a hott lande and plentious of generacion. And they had not competent livehode to find with their children ; where they made much care. And then the King of the land made a great counsell and a parliament, to witt : how to find their children honestly as gentlemen. And they could find no manner of good way. And then they did crye through all the realme, if there were any men that could enforme them, that he should come to them, and he should be soe rewarded for his travail, that he should hold him pleased.

After that this cry was made, then came this worthy clarke Ewvclyde, and said to the King and to all his great lords : ' If yee will take me your children to governe, and to teach them one of the Seaven Sciences, wherewith they may live honestly as gentlemen should, under a condition that ye will grant me and them a commission that I may have power to rule them after the manner that the sciences ought to be ruled.' And that the King and all his counsell granted to him anone, and sealed their commission. And then this worthy clarke tooke to him these lords's sonnes, and taught them the science of Geometrie in practice, for to work in stones all manner of worthy worke that belongeth to buildinge towers, temples, castells, and houses, and all manner of buildings ; and he gave them a charge on this manner."

Thus endeth the legend. If considered historically it is absurd ; the anachronism which makes Euclid contemporary with Abraham also makes it more absurd. But if interpreted as all Masonic legends



should be interpreted, to show Masonic truths in symbolic language, it loses its absurdity, and becomes invested with an interest to the craft at large.

LEGEND OF THE ASS'S BROKEN LEG. (Vol. V, p. 72.) Thorpe's "Northern Mythology," Vol. I, p. 23, gives the Christian form of the legend as follows :

## NORWEGIAN VERSE.

" Jesus reed sig til Heede,  
Der reed han syndt sit Folebeen.  
Jesus stgide af og lægte det;  
Jesus lagde Morv i Morv,  
Ben i ben, Kjød i Kjød;  
Jesus lagde derpaa et Blad,  
At det skulde blive i samme stad."

## ENGLISH VERSE.

" Jesus rode to the heath,  
There he rode the leg of his colt in two;  
Jesus dismounted and healed it;  
Jesus laid marrow to marrow,  
Bone to bone, flesh to flesh;  
Jesus laid thereon a leaf  
That it might remain in the same place."

This version corresponds exactly with the giant Skinner, when Thor traveled to Utgord, as related in the Edda. It has been adapted, by almost every nation, to some local tradition, and hence we see it exemplified in the nursery tale of Jack and the Bean Stalk. Grimm discovered and published a version which is new to us, and we give it here, with its translation :

## NORWEGIAN VERSE.

" Phol endi Wodan,  
Vuoru zi holza;  
Du wart demo Baldere's volon,  
Sin vuoz birenkit;  
Thu biguolen Sinthgunt,  
Sunna era Suister;  
Thu biguolen Frua,  
Volla era Suister;  
Thu biguolen Wodan  
So he wola conda,  
Sose bewrenki,  
Sose bluotrenki,  
Sose lidirenki,  
Ben zi bena,  
Bluot zi bluoda  
Lid zi geliden,  
Sose gelimida sin."

## ENGLISH VERSE.

" Phol and Wodan,  
Went to the woods;  
Then was a Balder colt  
His foot wrenched;  
Then charmed it Sinthgunt,  
And Sunna her sister;  
Then charmed it Frua  
And Volla her sister;  
Then charmed it Wodan  
As well he could,  
As well the bone-wrench,  
As well the blood-wrench,  
As well the joint-wrench.  
Bone to bone,  
Blood to blood,  
Joint to joint,  
As if glued together."

This version preserves current tradition in Norway how Wodan and Balder went out to hunt, and Balder's horse dislocated its foot, and how that he used charmed words, and set it and healed it.

A modern version of the tradition, current in Norway, makes the accident happen to the horse of Jesus, and Jesus dismounting performed the cure, and the verse is used as a formula for the healing of a person's limbs, as well as those of horses. The operation is described in Chambers's "Popular Rhymes of Scotland." "When a person has received a sprain, it is customary to apply to an individual

practiced in casting the 'wresting-thread.'" This is a thread spun from black wool, on which are cast nine knots, and tied around a sprained leg or arm. During the operator is putting the thread around the affected limb, he says, but in such a tone of voice as not to be heard by the lookers-on, and not even by the person being operated upon, the following verse :

" Our Lord rode,  
His foal's foot slade;  
Down he lighted,  
His foal's foot righted.

Bone to bone,  
Sinew to sinew,  
Blood to blood,  
Flesh to flesh."

" In the name of the Father, Son, and Holy Ghost."

There are many other versions, all based on the same legend that the colt's leg was broken by accident when Jesus rode into Jerusalem (Matthew XXI, 7-8). From the same event the name *Palm* Sunday is perpetrated from strewing palm branches along the way as he passed.

" **SUBLIME** " APPLIED TO MASTER'S DEGREE." (Vol. V, p. 56.) The word "sublime," says R. Kenneth MacKenzie, is usually applied to the Third Degree, but like many other terms, the words "Sublime Degree of a Master Mason" signify nothing, and are without authority. Hutchinson, Smith, and Preston do not use it. Hutchinson speaks of "the most sacred and solemn order," and of the "exalted" but not "sublime degree." Since the introduction of the Royal Arch degree, the word Sublime has been used, and the word Exalted appropriated to the Arch. In the Constitutions, Dublin, 1769, the Master's degree is called "most respectable," and the term "high and honourable" has also been employed. The word sublime first occurs in Dr. T. M. Harris's "Discourses," Boston, U. S., 1801. It was also used by Cole in 1817; and Jeremy L. Cross introduced it in his Hieroglyphic Chart. As it has been adopted in the modern English lectures, it is too firmly established to be removed.

THE POET'S "ESSAY ON MAN." (Collected and arranged by James Monk.) Mrs. H. A. Deming, of San Francisco, Cal., is said to have occupied a years in searching out and fitting together thirty-eight lines from as many different English and American authors, and arranging the lines into a poem. (See N. AND Q., Vol. IV, p. 304.)

The following fifty-two lines, from as many different authors, occupied five months of the leisure hours of Mr. Monk :

*The Mosaic Poem.*

- |   |                          |
|---|--------------------------|
| 1. What strange infatuations rule mankind !               | <i>Chatterton.</i>       |
| 2. What different spheres to human bliss assigned !       | <i>Rogers.</i>           |
| 3. To loftier things your find impulses burn,             | <i>Charles Sprague.</i>  |
| 4. If man would but his finer nature learn.               | <i>R. H. Dana.</i>       |
| 5. What several ways men to their calling have,           | <i>Ben. Johnson.</i>     |
| 6. And grasp at life though sinking in the grave !        | <i>Falconer.</i>         |
| 7. Ask, what is human life ! The sage replies :           | <i>Cooper.</i>           |
| 8. Wealth, pomp, and honor are but empty toys ;           | <i>Ferguson.</i>         |
| 9. We trudge and travel, but from pain to pain,           | <i>Quarles.</i>          |
| 10. Weak, timid landmen on life's stormy main ;           | <i>Burns.</i>            |
| 11. We only toll who are the first of things ;            | <i>Tennyson.</i>         |
| 12. From labor, health ; from health contentment springs. | <i>Beattie.</i>          |
| 13. Fame runs before us as the morning star.              | <i>Dryden.</i>           |
| 14. How little do we know that which we are !             | <i>Byron.</i>            |
| 15. Let none, then, his certain knowledge boast,          | <i>Pomfret.</i>          |
| 16. Of fleeting joys too certain to be lost ;             | <i>Waller.</i>           |
| 17. For over all there hangs a cloud of fear ;            | <i>Flood.</i>            |
| 18. All is but change and separation here.                | <i>Steele.</i>           |
| 19. To smooth life's passage o'er life's stormy way,      | <i>Timothy Dwight.</i>   |
| 20. Sum up at night what thou hast done by day.           | <i>Herbert.</i>          |
| 21. Be rich in patience, if thou in " gudes " be poor ;   | <i>Dunbar.</i>           |
| 22. So many do stoop to sights unsure.                    | <i>Goff. Whitney.</i>    |
| 23. Choose out the man to virtue best inclined,           | <i>Rowe.</i>             |
| 24. Throw envy, folly, prejudice behind ;                 | <i>Langhorne.</i>        |
| 25. Defer not till tomorrow to be wise ;                  | <i>Congreve.</i>         |
| 26. Wealth heaped on wealth, nor truth nor safety buys ;  | <i>Dr. Johnson.</i>      |
| 27. Remembrance worketh with her busy train ;             | <i>Goldsmith.</i>        |
| 28. Care draws on care, woe comforts woe again.           | <i>Drayton.</i>          |
| 29. On high estates huge heaps of care attend ;           | <i>Webster.</i>          |
| 30. No joy so great but runneth to an end ;               | <i>Southwell.</i>        |
| 31. No hand applauds what honor shuns to hear,            | <i>Thomson.</i>          |
| 32. Who casts off shame should likewise cast off fear.    | <i>Sheridan Knowles.</i> |
| 33. Grief haunts us down the precipice of years,          | <i>W. S. Lander.</i>     |
| 34. Virtue, alone, no dissolution fears ;                 | <i>Edward Moore.</i>     |
| 35. Time, loosely spent, will not again be won ;          | <i>Robert Green.</i>     |
| 36. What shall I do to be forever known ?                 | <i>Cowley.</i>           |
| 37. But now the wane of life comes darkly on,             | <i>Joanna Baillie.</i>   |
| 38. After a thousand mazes overgone ;                     | <i>Keats.</i>            |
| 39. In this brief state of trouble and unrest,            | <i>Bernard Barton.</i>   |
| 40. Man never is, but always to be blest ;                | <i>Pope.</i>             |
| 41. Time is the present hour, the past is fled ;          | <i>Marsden.</i>          |
| 42. O, thou futurity, our hope and dread !                | <i>Elliot.</i>           |
| 43. How fading are the joys we dote upon !                | <i>Blair.</i>            |
| 44. Lo, while I speak, the present moment's gone.         | <i>Oldham.</i>           |
| 45. O, thou eternal arbiter of things,                    | <i>Akenside.</i>         |
| 46. How awful is the hour when conscience stings !        | <i>J. G. Percival.</i>   |
| 47. Conscience, stern arbiter in every breast,            | <i>J. A. Hillhouse.</i>  |
| 48. The fluttering wish on wing that will not rest,       | <i>Mallet.</i>           |
| 49. This, above all, to thine own self be true ;          | <i>Shakespeare.</i>      |
| 50. Learn to live well that thou mayst die so too.        | <i>Sir J. Penham.</i>    |
| 51. To those that list the world's gay scenes I leave,    | <i>Spenser.</i>          |
| 52. Some ills we wish for, when we wish to live.          | <i>Young.</i>            |

THE "MAD POET." (Vol IV, p. 650.) MacDonald Clarke, an eccentric American poet, is familiarly known by this sobriquet. He adopted it as a pseudonym. The following quotation is credited to MacDonald Clarke. What work of his is it from and where found? "Night drops her sable mantle down and pins it with a star." E.

KINNEY'S STATUE OF ETHAN ALLEN. (Vol. V, p. 56.) I know little about Kinney's Statue of Ethan Allen. I have seen it stated, however, that the statue of him at Montpelier was modelled, so far as the body is concerned, from the figure of General Ethan A. Hitchcock, his worthy grandson. This would hardly be the case, except there was a close resemblance. General Hitchcock was hardly a man to permit such a thing on any other ground. There is a picture of General Hitchcock in Frank Moore's "Diary of the Rebellion." He was a man, as I remember, about five feet ten inches high, perhaps a little less; well-formed body, and a benignant countenance. He had a strong proclivity for mystic, philosophic, and other literature closely relating to that. The little monograph on "Alchemy, or the Hermetic Philosophy," which I published in 1869, was a synopsis of his book entitled "Alchemy, and the Alchemists," and met his approval. He died in Florence, Georgia, in 1870.

I do not suppose that this meets Mr. Waggoner's wishes very closely; but if it prompts any one else to speak who knows more about it, it will not have been out of place. A. WILDER.

PELASGI—PELASGOS. (Vol. IV, p. 402; V, p. 36.) I desire to remark on the paragraph about Pelasgi. The statement that *pelasgos* means the sea, in the previous volume, cannot be proved. *Pelagos* is the word which means sea, and the insertion of an *s* in the word makes all the difference in the world. The derivation of *Pelasgos* is in fact wholly unknown. Again: that the "Philistines or *Pelesti* were probably a cognate people" with the Pelasgi is not well founded. The names do not correspond. The *t* and *g* in the two last syllables throw the two names widely apart. There is not the least historical or philological basis for the assertion that the Philistines were Pelasgi. And the remark, "there is no other conjecture more plausible," is not a wise remark. If we cannot find a good solution of a problem, shall we therefore take up with a bad one? not at all, we should wait. To adopt a bad explanation rather than to wait for a good one is exactly the process of savage minds, and is unworthy of a civilized philosopher. Lastly: The word *Pelesti* is not a proper representative of the Hebrew name which is translated in the authorized version "Philistines." That word, if transliterated from the Hebrew, is not *Pelesti*, but *Pelishtim*; and the word "Pelethites," if transliterated in like manner, is not *Pelesti*, but *Pelethi*. This inaccuracy, however, makes no difference with my statement about the *t* and *g* in the final syllables. PRIGGLES.

## Q U E S T I O N S .

**COMMONWEALTH.** Why is the term *Commonwealth* applied to Massachusetts and to no other state ?  
CONCORD, N. H.

**J-E-R-K-S.** Can any one give a minute history of the peculiar manifestations called "Jerks," supposed to have originated about the year 1796, or 1797, in Bourbon county, Kentucky, among a religious sect called "New Lights." Was that the origin of this very strange affection of this class of people, and how long has it existed since; and is it at the present time known to exist anywhere? Shall be glad to have all there is known about the same.

M. O. WAGGONER, Toledo, O.

**HYERONIMUS.** A clerical appearing old gambler, at a county fair, in Indiana, had a booth erected in which he open up a game called "Hyeronimus." At different places on a counter extending around the booth, were the numbers 1, 2, 3, 4, 5, 6. The old fellow sat in the center, and from a box threw three dice. The players put their money on such numbers as they chose. If a number upon which the money was laid was thrown by the gambler, the player was paid the amount of his bet; if not he lost. If doublets were thrown, he was paid two for one, and if threes were thrown, three for one.

What were the chances against the player? Explain the process for calculating them. I have seen half a dozen solutions, and no two of the answers alike.  
Q., Terre Haute, Ind.

**BENJAMIN FRANKLIN AND HIS SON.** Some twenty years ago, a newspaper published an account, the authorship of which was attributed to Bishop White of the Protestant Episcopal church. It stated substantially that the Bishop was lodging at a public house, and after retiring for the night, became incidently the listener to a conversation. A father and a son, the former a "whig," and the latter a "tory," at the outbreak of the American Revolution, had each conveyed his property to the other, to save it from confiscation, with the implied understanding that the one belonging to the successful party should afterwards restore to the other his part. In the dispute which the Bishop overheard it transpired that the two were there, and the son was pleading with his father to make the promised restitution, which the latter refused. Next morning the Bishop learned that his fellow lodgers were no other than Dr. Franklin and his son Governor Franklin of New Jersey.

This story has the plausible characteristic of being in keeping with Dr. Franklin's Yankee thrift; but in most other respects, is hardly creditable. Can any of your readers give light, or the truth?

A. W.

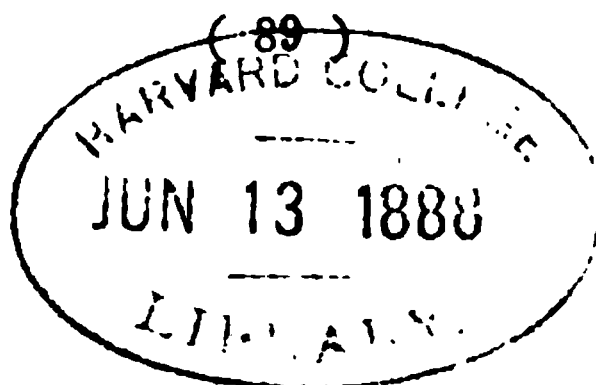












MISCELLANEOUS

NOTES AND QUERIES,

WITH ANSWERS.

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*"Who offends against Heaven has none to whom he can pray."*—CONFUCIUS.

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*Notes.*

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HIPPOCRATES. The father of physic and prince of physicians was the first man who laid down precepts concerning physic. It would be endless to transcribe the many things that have been said of him, or to relate honors that have been paid to his memory ; with the Grecians he passed for a God and his-day was kept as a festival. He taught his art as he practiced it, with candor and liberality, a singular proof of which was his mistaking a fracture of the skull for a natural suture, and being ingenuous enough to confess it, and even leave it record. This circumstance is noticed by Celsus, who seemed greatly upon delighted with it. This, says he, was acting like a truly great man, ready to make a frank acknowledgement of his errors, and especially in a profession where it is of importance to posterity to record the truth. The most singular specimen of his ingeniousness, however, is that medical curiosity called

THE OATH OF HIPPOCRATES.

" I swear by Apollo the Physician, by Æsculapius, by his daughters Hygeia and Panacea, and by all the Gods and Goddesses, that to the last of my power and judgment, I will faithfully observe this their oath and obligation. The master that has instructed me in this art, I

will esteem as my parent, and supply as occasion may require, with the comforts and necessities of life. His children I will regard as my own brothers, and if they desire to learn, I will instruct them in the same art without any reward or obligation. The precepts, the explanations, or whatever else belongs to the art, I will communicate to my own children, to the children of my master, or to such other pupils as have subscribed to the Physician's oath, and to no other persons. My patients shall be treated by me to the best of my power and judgment, in the most salutary manner without any injury or violence. I will neither be prevailed upon by any other to administer pernicious physic, or be author of such advice myself. Cutting for the stone I will not meddle with, but leave it to the operators in that way. To whatever house I am sent for, I will always make patient good my principal aim, avoiding as much as possible all voluntary injury and corruption. And whatever I hear or see in the course of a case, or otherwise, relating to the affairs of life, nobody shall even know it, if it ought to remain a secret. May I be prosperous in life and business and forever honored and esteemed by all men, as I observe this solemn oath; and may the reverse of all this be my portion if I forswear myself."

M. O. WAGGONER, Toledo, O.

ANCIENT SYMBOL OF THE SUN. The flat pieces of iron, like the letter S, that are frequently seen on the walls of old brick buildings, are said to be ancient symbols of the sun. Their origin may be traced back to Asia where they were in use in prehistoric times, and the same sign was once employed on the official seals of Sicily and the Isle of Man.

J. B. P.

DR. GEORGE CHEYNE, M. D., was a North Briton, and a physician who enforced his doctrines by personal example. This course on his part created a host of enemies who attacked but never defended their intrepid antagonist, as the following tends to prove :

DR. WYNTER TO DR. CHEYNE.

Tell me from whom, fat-headed Scot,  
Thou didst thy system learn;  
From Hippocrates thou hadst it not,  
Nor Celsus, not Pitcairn.

Suppose we own that milk is good,  
And say the same of grass;  
The one for babes is only food,  
The other for an Ass.

So, one new prescription try,  
(A friend's advice forgive);  
Eat grass, reduce thyself, and die,  
Thy patients then may live.

DR. CHEYNE TO DR. WYNTER.

My system, doctor, is my own,  
No tutor, I pretend;  
My blunders hurt myself alone,  
But yours, your dearest friends.

Were you to milk and straw confined,  
Thrice happy might you be;  
Perhaps you might regain your mind,  
And from your wit be free.

I cant your kind prescription try,  
But heartily forgive;  
'Tis natural you should wish me die,  
That you yourself should live.

M. O. WAGGONER, Toledo, Ohio.

THE "MOONLESS MONTH." The following "wonderful" item appears in Marysville (Cal.) *Budget*, March, 1888, credited to a public school journal. It has been seen in other educational journals.

"A MOONLESS MONTH. The month of February, 1886, was in one respect the most remarkable in the world's history. It had no full moon. January had two full moons, and so had March, but February had none. Do you realize what a rare thing in nature that was? It had not occurred since the time of Washington, nor since the beginning of the Christian era, nor since the creation of the world! And it will not occur again, according to the computation of astronomers, for—how long do you think?—2,500,000 years. Was not that truly a wonderful month?—*Public School Journal*."

Now, what are the facts? The same "wonderful" thing occurred in 1771, 1779, 1790, 1798, 1809, 1828, 1847, 1866.

"This occurrence," says a correspondent of the *Boston Journal*, "depends upon the following principle: The moon makes a revolution in 29 days, 12 hours, 44 minutes. If we reduce this to minutes we get 42,524 minutes. Now in 19 common years there are 6935 days; but as every fourth year has 366 days, then in a period of 19 years after any leap year, there are 4 days more. Adding, therefore, 4 days for leap years, we have 6939 days. But if this period is added to any common year, there will always be five days, (there being five leap years in the period), or 6940 days. During this period the moon makes 235 complete revolutions, and 7 hours and 40 minutes on another revolution; thus it will be apparent it returns, within a few hours, every 19 years, to the same place. This, however, does not occur every 19 years, unless it is a common year. As this period is not exactly a complete one, it will not become inaccurate in more than three periods."

THE TOWER IN SILOAM. (Vol. V, 68.) We appear to be without historic evidence in relation to the falling of the tower in Siloam. The fountain there was particularly celebrated as sacred, and the peculiar ebbing and flowing of its waters were also notable. Anciently beside the sacred wells were set up pillars of upright stone, or towers—the latter being symbols of the Divine Father, and the other of the Mother. Thus, Adonijah the elder son of King David was crowned by the stone pillar of Zoheleth, which was by En-Rogel, as the Fountain of Rogel. Judaea was subject to earthquakes; and several occurred during the reign of Tiberias. Probably one of these overthrew the fire-tower of Siloam. It bore Phenician inscriptions.

A. W.

THE BENEDICTION OF (ST.) PATRICK ON THE PEOPLE OF IRELAND  
Where can be found what is known as the "The Blessing of St. Patrick on the Irish people?" JOHN ANDERSON.

A translation of the blessing from the ancient orthography of the Irish language was published in the *Irish Echo*, March, 1888, and as it is brief, we give it here :

"THE BLESSING OF GOD upon you all.

Men of Eire, sons, women,  
And daughters, prince-blessing,  
Good blessing, perpetual blessing,  
Full blessing, superlative blessing,  
Eternal blessing, the blessing of heaven,  
Cloud-blessing, sea-blessing,  
Fruit-blessing, land-blessing,  
Produce-blessing, dew-blessing,  
Blessing of the elements, blessing of prowess,  
Blessing of chivalry, blessing of voice,  
Blessing of deeds, blessing of magnificence,  
Blessing of happiness, be upon you all,  
Laics, clerics, while I command  
The blessing of the men of heaven,  
It is my bequest, as it is a perpetual blessing."

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A POEM OF DISPUTED AUTHORSHIP. The following poem on "My Grandmother's Elm," under the name of Mrs. Mary Ann Sullivan, as author, is found in a collection of literature entitled "The New Hampshire Book, (p. 185,) being specimens of literature of the Granite State," published by Charles T. Gill, Nashua, 1842. This poem was copied into a work entitled "The Poets of New Hampshire, p. 768,) being specimen poems of three hundred poets of the Granite State, with biographical sketches," compiled by Bela Chapin, published by Charles H. Adams, Claremont, 1883. Mr. Chapin says; "Mrs. Sullivan was a native of this state. Further information in regard to this writer the compiler has been unable to obtain."

The manuscript copy of this poem is in the possession of the editor of *Notes and Queries*, with many others of her productions, being written by Miss Harriet M. Gillet, at eighteen years of age. She was a native of Weare, N. H., and daughter of John Gillet, who died in 1872, who also left several manuscript poems. The elm was planted by Susan Burnham, about one-half mile from the East Village in Weare, near "the mill stream" called Choate Brook, and the "south-

easter raging by," was the September gale of 1815. This article was suggested by the reading of the poem from the manuscript of Harriet M. Gillet by a relative, Miss Annie L. Gould (second removed), on Arbor Day, April 28, at the Lincoln-street School, Manchester, when the authorship was questioned. Who was Mrs. Mary Ann Sullivan?

Here is the poem as published in the collection mentioned :

### *My Grandmother's Elm.*

BY HARRIET M. GILLET, EAST WEARE, N. H.

—O—O—

If ever you visit my native town,  
Will you seek out the vale where the mill stream comes down?  
Even the villagers' children will point you the road,  
And the very old house where my grandsire abode.

But the pride of the vale which I wish you to see,  
Is my grandmother's elm, the old mammoth tree;  
How widely its graceful and spherical crown  
Flings over the valley a shadow of brown!

When the fierce south-easter was raging by,  
Filling with clamor the gentle blue sky;  
Then a lofty branch like a forest oak,  
From the noble old tree by its fury was broke.

Oft my grandmother told us, as pondering we stood,  
How, three scores years since, from a neighboring wood,  
She carried that elm in her little right hand,  
And *her father* planted it firm in the land.

Her grave is grown smooth on the green hill side,  
But the elm still lives in its towering pride;  
And the spring's gayest birds have a colony there,  
And they gladden with carols the midsummer air.

And gay as the wild bird's melody,  
Are the sports I have led beneath that tree;  
The old elm tree—oh, would it were mine  
In the shade of that tree even now to recline.

DEUCALION. (Vol. V, p. 69.) The name Deucalion has probably no numeral reference whatever. Sanskrit scholars derive it from the designations *Deva* and *Kala*, which would indicate the god Siva, the primal nature-god of India, whose worship, as Hyde Clarke, Forlong, and others show, was once universal. A. WILDER.

CLAIMS OF DESCENDANTS. (Vol. V, p. 68.) The claims of descendants from ancestors in Europe or England constitute the poorest kind of romance, To use an Hibernicism : 1. The courts and governments will not let these estates go out of the country ; and 2d, there are none to go out. I am very grateful to my venerable ancestor who left England just 250 years ago, that she gave a quit-claim to all the family estates. I have therefore refrained from going unshod while waiting for shoes from Purley Hail. A. WILDER.

**ABNER KNEELAND'S BLASPHEMY.** What was the blasphemy said to have been uttered by Abner Kneeland? **WELLINGTON HOWARD.**

The so-called blasphemy said to have been uttered by Mr. Kneeland was that he wrote and published an article in his liberal paper containing the following language — the word “they” referring to some church in Boston :

*“ They believe in a God which I do not.”*

This was construed by the court as blasphemy, infidelity, and rank atheism.

Mr Kneeland showed to the court, producing the original manuscript copy sent to the printer, that he wrote the following :

*“ They believe in a God, which I do not.”*

The printer by error had omitted the comma ( , ) after God. This, one will see, changed the meaning entirely ; the church's God and Mr. Kneeland's God were not the same God, but both believed in a God.

A similar instance was the burning of Servetus at the stake at the instance, it is said of John Calvin. When all was ready for the torch, Servetus was told to say the following and save his life :

*“ I believe that Jesus Christ was the eternal son of God.”*

This he refused to say, but said he could truly say,

*“ I believe that Jesus Christ was the son of the Eternal God.”*

This would not satisfy Calvin and Servetus was burned. For fuller details consult Owen's “ Debatable Land.”

**ZEM ZEM.** (Vol V, p. 69.) Wells have always been a necessary feature to ancient temples. The well of Zem Zem situate near the boundary of Yemen or Southern Arabia, was remarkable for its constant supply of not over-pure water, and was a great resort of caravans, when the peninsula was rich and fertile in prehistoric periods. After the change of the routes of commerce the region was abandoned, but some fourteen centuries or more ago, was occupied anew and everything restored. The goddess Al Haua was worshipped ; the black stone and holy well were her symbols. This was in keeping with ancient practice. The Venus-Aphrodite of Paphos was represented by an oval stone ; the Great Mother on Mount Pessinus in Asia Minor was commemorated in like manner ; and we are told that Astarte finding a star or meteoric stone, consecrated it and placed it in the “ Holy Island,” Tyre. The black stone at Mekka and Holy Well were rep-

resentations of the Goddess, and the Kaba or mystic cone or traph was her sanctuary. The more modern succeed the ancient religions, chiefly by changing of names, while retaining the things signified. So we have the crescent of Venus as the standard of Islam; the Kaba is still the resort of pilgrims, as in pagan times, and the sacred well Zem Zem is as holy in the present faith as it ever was in the palmy days of the former rites.

Wells appear so universal that every little tribe appears to have had its holy fount. The three Urd-sisters of Norse mythology—the Weird sisters of Macbeth—sit by the Urd fountain, water the roots of the world-tree Ygdrasil, and parcel out to mortals their allotments. In the bottom of the well of Mimir lay truth, wisdom and knowledge—doubtless “the knowledge of good and evil.” Ingenious scholars derive the name Athena Pallas from *Aith* and *ain*, the Fountain of the Sun, which would intimate the Athenian goddess to denote the personified well of the Akropolis.

A. WILDER.

FRANKLIN'S LETTER TO STRAHAN. (Vol. V, p. 72.) “You are now my enemy, and I am yours.”

J. B. McMaster says: “Another incident in his life that is commonly misunderstood, is the famous Strahan Letter; we mean, ending, ‘you are now my enemy, and I am yours.’ We know of no collection of his works and letters in which this document is not treated as a piece of spirited and sober writing. Yet it was no more than a jest. Had this not been so, all friendship, all correspondence, between the two would have ended the day the letter was received. But no such falling-out took place, and they went on exchanging letters long after the war had seriously begun.”—*Atlantic Monthly*, October 1887, p. 325.

A. WILDER, M. D., Newark, N. J.

ORIGIN OF DRUGGISTS' COLORED BOTTLES FOR SIGNS. Why are such used in drug-store windows for signs? DAVID.

It is due, like the symbolical figures often seen upon the bottles in question, to those of the most ancient chemists, the Moors, inhabitants of Arabia and Old Spain. They generally made their own chemicals, and for that purpose, as also for experimenting, they used retorts, and the like, many of which were in the shape of bottles; and these vessels became connected in the public mind with the men who used them, and hence became the sign of a chemist's shop.

D. M. DRURY, Brooklyn, N. Y.



## QUESTIONS.

1. In what nation and at what date did married women first assume the name of their husbands? (Miss Mary Smith became Mrs. Mary Doe).  
OLD BACHELOR.

2. What was the Hanseatic League?  
CALCHAS.

3. How many ways has this country been governed and what were the forms called?  
CALCHAS.

4. How came purple to be adopted as the imperial color?  
D. M. DRURY.

5. Why does anxiety turn the hair gray?  
D. M. DRURY.

6. What river in Italy has its name spelled with one letter?  
JONATHAN.

7. An elderly lady from the Province of Quebec residing now in the States, has lost the year of her birth; she remembers well at eight years of age of some rebellion, insurrection or invasion taking place in the Province, and of the armed militia passing her home, which would be from 80 to 90 years ago. Who can give any account of any such Canadian disturbance?  
JOSEPH. F.

8. What is the meaning of the Indian name Piscataquog as applied to the river running through this town? Was there a Piscataquog tribe of Indians?  
M. G. S., Goffstown, N. H.

9. Has any other person, beside Lord Timothy Dexter, mentioned in a previous number, written and published a book without any punctuation?  
J. PAYSON SHIELDS.

10. How many editions of Euclid's Elements of Geometry have been published, that is by different persons? "The Imitations of Christ," and the works of Shakespeare have been similarly inquired for in previous numbers.  
J. PAYSON SHIELDS.

11. In a mathematical work by William A. Myers, published in Cincinnati, 1874, he quotes the following:

"And the stone which the builders rejected was composed of three triangles."

From what is this quoted, as my researches in the Scriptures show the reading quite different? (See Ps. CXVIII, 22; Isaiah XXVIII, 16; Matt. XXI, 42; Mark XII, 10; Luke XX, 17; 1st Peter II, 6-7).

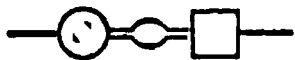
STONE-SQUARER.

12. What is the secret of those persons who are prodigies in memory whereby many, by some system of mnemonics, repeat long decimals of hundreds of place accurately?  
F. K. GOLDSMITH.

12. What is the legend of the Seven Golden Cities? L. E. IEYES.

13. What city was destroyed by silence? L. E. IEYES.

14. What is the origin of the word Mascot? L. E. IEYES.

*Cyclometry — Quadrature — Rectification.*

During the past six years as editor of the *American Miscellaneous Notes and Queries*, we have received many kinds of questions involving the value of  $\pi$ , and such questions have been discarded from the magazine on account of the endless discussion they engender. But of late the literature on "Cyclometry" having been inquired for, we at once decided to publish a bibliography and brief review of such works as our library furnished and a few mentioned in our serial literature.

CYCLOMETRY is the science of *circle-measuring*; a quadrature is the *making of a square* equivalent to a given circle; rectification of the circle is the *finding of a straight line* equal to the circumference of a given circle. These problems are one and the same in the sequel, and have engaged the attention of geometers from the earliest ages. The object of this paper is not to discuss the various methods devised to solve the famous problems, but to give a brief account of some of the quite numerous productions on the subject, and this in answer to many inquiries from all parts of the world, as to what has been written on the perplexing problems.

The secret key to the problems is the true value of the ratio of the diameter to the circumference of any circle, which ratio is denominated by the Greek letter  $\pi$  (*pi*), the initial of the word *periphēria*, the circumference of a circle.

The first recorded instances of a value of  $\pi$  are found in the Bible. One used by King Solomon in the making of vessels for the Temple:

"And he made a molten sea, ten cubits from one brim to the other: *it was round all about, and his height was five cubits; and a line of thirty cubits did compass it round about.*"

[*I Kings* VII, 23.]

"Also he made a molten sea of ten cubits from brim to brim, round in compass, and five cubits the height thereof; and a line of thirty cubits did compass it round about."

[*II Chron.* II, 2.]

The translation of Julia E. Smith gives these texts slightly different, the latter of which is as follows:

"And he will make the molten sea ten by the cubit from its lip to its lip, rounded round about; and five by the cubit its height; and a cord thirty by the cubit will surround it round about."

King Solomon's ratio (3) can be explained only that he measured the diameter from the outside, and the circumference on the inside, of the cord encircling the top of the molten sea.

There is another obscure allusion to a value of  $\pi$  found in the name

*Eliezer* (which in Hebrew numerals is 318), the steward of Abram's house (*Gen.* xv, 2); this is a circumference value to a diameter 100. Eliezer was the "instructor" of *three hundred and eighteen* "trained servants" (*Gen.* xiv, 13). Josephus (*Ant.* Bk. I, viii, 2) says Abram "communicated arithmetic and delivered the science of astronomy to the Egyptians." See J. R. Skinner's "Sources of Measure," p. 208, for more information on this value of  $\pi$ .

The earliest work giving an account of the many attempts to square a circle is that by J. E. Montucla, entitled *Histoire des Recherches sur la Quadrature du Cercle*, Paris, 1754. He adds to the title, "A Book intended to make known the Real Discoveries concerning this Celebrated Problem, and to serve as a Preventative against new attempts at its Solution." How far he has succeeded will appear in the following pages. From Babin's translation of this work we mention some of the earlier attempts to discover the quadrature.

Archimedes, about 250 B. C., applied himself to the problem and showed that the value of  $\pi$  was less than  $3\frac{1}{7}$  and more than  $3\frac{1}{7}$ . Campanus, author of the work "Tetragonismus," published in 1503, one of the earliest of two *printed* book on the quadrature, claims that the ratio of Archimedes was exactly  $3\frac{1}{7}$ , or 3.142857 $\frac{1}{7}$ . Archimedes' work was entitled *De Dimensione Circuli*.

Aristotle mentions two of his contemporaries, Antiphon and Bryson, who worked on the problem. Antiphon's method was to find the area of the circle by adding to the inscribed square the area of four isosceles triangles in the four segments, also the sum the eight similar triangles in the remaining segments, and so on till the circle was exhausted. Bryson's method resulted in the ratio,  $3\frac{3}{4}$ , or 3.75 !

Sextus, a disciple of Pythagoras, claimed to have solved it, but his method has not come down to us. Aristophanes, in his "Comedy of the Clouds," ridicules Meton of Metonic-Cycle fame, for endeavoring to find the value of  $\pi$ .

Nicomedes and Appolonius made researches on the problem ; the former by means of the curve called *the quadratrix*, the discovery of which has been ascribed to Dinostratos. Eutocius tells us that Appolonius had approached nearer the true ratio than Archimedes did. Philo of Gadara had approached still nearer, so that his ratio differed by less than  $\frac{1}{100000}$  from the usually accepted ratio. Anaxagoras, while in prison, spent much time on the problem. Hypocrates of

Chios while searching for the ratio was led to the discovery of the exact area of the *lune* or crescent-shaped figure, which can be demonstrated to be exactly equivalent to a given square.

Cardinal Nicholas de Cusa rolled a wheel on a plane, and then he measured the path of one revolution of the wheel and made the ratio to be the  $\sqrt{10} = 3.1622776+$ . He also conceived of the curve made by a point in the rim of the wheel passing through space, called the cycloid, and believed with Charles Bovillus, in the next century, that it was the arc of a circle.

Oronce Finée, a Royal professor in 1544 published a quadrature a little more ingenious than Bovillus; Monantheuli, another Royal professor, in 1600, published his ratio. In 1592, Joseph Scaliger published his *Nova Cyclometria*, giving the ratio,  $3.14098+$ ; being shown his error by five geometers, he would not surrender. The only quadrator on record who, it is said, was convinced of his error, and acknowledged the same, was Richard White (Albinus), a Jesuit; his book is called *Chrysespis sen Quadratura Circuli*.

Montucla mentions many others who have spent much time and labor to discover the value of  $\pi$ , bringing the history of the subject down to the publication of his work.

Montucla says, speaking of France, that he finds three objects prevalent among cyclometers :

1. That there was a large reward offered for the solution
2. That the longitude problem depended upon the solution.
3. That the great end and object of geometry depended upon it.

Dr. Charles Hutton says, in writing on this subject, that he divides the writers on this problem into two classes : The first, consisting of able geometers not led away by illusions, are those who seek only for the approximation more and more exact, whose researches have often terminated in discoveries in almost every part of geometry. Second, those who are less acquainted with the principles of geometry and try to solve the problem by analogies and paralogisms.

However this may be, the results of many of them greatly differ, and that too among some able geometers. We think the object in view is to find a *finite* ratio which shall be the *true* value of  $\pi$ . All desire to find a ratio that shall be finite. The names of many are given, and the results of some are stated.

## *J. E. Montucla's Cyclometers.*

From Babin's translation of Montucla's "History of the Quadrature," we compile the names of writers on the circle. The list could be extended by including many others who wrote against the *quadrateurs*.

Mr. Babin gives only 14 of the results of Montucla's cyclometers.

Archimedes, between $3\frac{1}{7}$ and $3\frac{1}{71}$	Duchesne, Simon,
Bryson, 3.75	Falcon, Sir James, 1587,
De Bovillus, Charles, 3.1622776+	Falconet (the abbot), 1740,
De Cusa, Cardinal, 3.1622776+	Finæus, Orontius,
Hobbes, Thomas, 3.1622776+	Fondee, of Nangis,
Leistner, 3.137959141	Gephirander, Thomas,
Longomontanus, 3.14185	Gregory, James,
Lowenstein, Christian, 3.1426+	Hanow,
Metiús, Peter, 3.1415929+	Hipocrates, of Chios,
Scaliger, Joseph, 3.14098+	La Costa, Bertrand, 1677,
Wayvel, S. Daniel, 3.142	La Frenaye,
Romanus, Adrianus, (16 decimals)	Lambert,
Petrus, Cornelius, (32 decimals)	Mallemant, of Messange,
Van Ceulen, Lud., (36 decimals)	Marinoni,
Anaxagoras,	Mathulon, 1728,
Antiphon,	Meton, of the Meton-cycle,
Appolonius,	Monantheuil,
Bachon, John, of Lyons, 1657,	Nicoli,
Basselin,	Nicomedes,
Cano, Alpheus, of Molina,	Oudart, S., of Ogen, Erance,
Christman,	Philo, of Gadara,
Clavius,	Roerberg, G. A., 1713,
Clerget,	Scotto, Benoit,
Cluvier, Dethleu,	Sextus, disciple of Pythagoras,
De Causans,	Snellii, Willibrordi,
De Culant,	Sullamar, Henry,
De Gregoire, St. Vincent, 1647,	Tardi, 1754,
De Laleu, of Rochelle,	Vieta, Francis,
De Vausenville, Rohberger,	Wallis,
	White, Richard (Albinus).

The Academy of Sciences gave notice it would examine no more quadratures, no more trisections, no more duplications, and no more perpetual motions. De Vausenville asked this question: "Would the quadrature be found if means could be devised for determining the center of gravity of a sector of a circle in common parts of the radius and circumference of the same circle?" Dr. Hutton answered "Yes."

## *The Extension of the Decimals of $\pi$ .*

The extension of the decimals of the orthodox value of  $\pi$  is credited to several mathematicians as follows :

Peter Metius, (15—-1636)	.	.	6 places.
Francis Vieta, (1540-1603)	.	.	10 "
Adrianus Romanus,	.	.	16 "
Cornelius Petrus,	.	.	32 "
Ludolph Van Ceulen,	.	.	36 "
Abraham Sharp, (1651-1742)	.	.	72 "
James Machin, (16—-1751)	.	.	100 "
Thomas F. de Lagny, (16—-1734)	.	.	128 "
(Radcliffe Library, Manuscript, Oxford,)	.	.	155 "
Clausen and Dase, of Germany, independently,	.	.	200 "
William Rutherford, 1843,	.	.	441 "
William Shanks, 1853,	.	.	607 "
William Shanks, 1873,	.	.	707 "

### *707 Decimals.*

$\pi=3.141592\ 653589\ 793238\ 462643\ 383279\ 502884\ 197169\ 399375$   
 $105820\ 974944\ 592307\ 816406\ 286208\ 998628\ 034825\ 342117$   
 $067982\ 148086\ 513282\ 306647\ 093844\ 609550\ 582231\ 725359$   
 $408128\ 481117\ 450284\ 102701\ 938521\ 105559\ 644622\ 948954$   
 $930381\ 964428\ 810975\ 665933\ 446128\ 475648\ 233786\ 783165$   
 $271201\ 909145\ 648566\ 923460\ 348610\ 454326\ 648213\ 393607$   
 $260249\ 141273\ 724587\ 006606\ 315588\ 174881\ 520920\ 962829$   
 $254091\ 715364\ 367892\ 590360\ 011330\ 530548\ 820466\ 521384$   
 $146951\ 941511\ 609433\ 057270\ 365759\ 591953\ 092186\ 117381$   
 $932611\ 793105\ 118548\ 074462\ 379834\ 749567\ 351885\ 752724$   
 $891227\ 938183\ 011949\ 129833\ 673362\ 441936\ 643086\ 021395$   
 $016092\ 448077\ 230943\ 628553\ 096620\ 275569\ 397986\ 950222$   
 $474996\ 206074\ 970304\ 123668\ 861995\ 110089\ 202383\ 770213$   
 $141694\ 119029\ 885825\ 446816\ 397999\ 046597\ 000817\ 002963$   
 $123773\ 813420\ 841307\ 914511\ 839805\ 70985\pm$

### *Constants.*

Common logarithm of  $\pi = 0.49714987269413385435+$   
 Naperian logarithm of  $\pi = 1.14472988584940017414+$   
 Reciprocal of  $\pi = 0.318309886183790671537767526745+$   
 Square of  $\pi = 9.869604401089358618834490999876+$   
 Square root of  $\pi = 1.772453850905516027298167483341+$   
 Naperian base,  $e = 2.718281828459045235360287471352+$   
 Common logarithm of  $e = 0.434294481903251827651128918916+$   
 Naperian logarithm of  $e = 1.00000000000000000000000000000000+$

$$\sqrt{e}^{\pi} = 4.810477481+$$

*Arithmetical Coincidences.*

1. In a circle of diameter 4, the *perimeter* of the circumscribed square is equal to *area* of the circumscribed square.
2. In a circle of diameter 4, the *circumference* is equal to the *area*.
3. In a circle of circumference 4, the *diameter* is equal to the *area*.
4. In a circle of diameter  $\pi$ , the *circumference* is equal to *area* of circumscribed square.
5. In a circle of circumference  $\pi$ , the *diameter* is equal to *area* of circumscribed square.
6. If diameter of a sphere is 6, the *surface* is equal to *solidity*.
7. If surface of a sphere is 6, the *diameter* is equal to *solidity*.
8. If diameter of a sphere is 1, the *circumference* is equal to *surface*.
9. If circumference of a sphere is 1, the *diameter* is equal to *surface*.
10. The *side* of the inscribed equilateral triangle is exactly equal to the *area* of the circumscribed hexagon. }  $\sqrt{.75}$
11. The *altitude* of the inscribed triangle is exactly equal to the *area* of the inscribed dodecagon. }  $.75$
12. The *side* of the inscribed square is exactly equal to the *area* of the inscribed octagon. }  $\sqrt{.50}$
13. Twice the *area* of the inscribed equilateral triangle is exactly equivalent to *area* of the inscribed hexagon. }  $\sqrt{.421875}$
14. The *side* of the inscribed hexagon is exactly equal to the *area* of the inscribed square. }  $.50$

Area of inscribed triangle	to circumscribed triangle	is as	1 to 4
"	" square	" square	1 to 2
"	" hexagon	" hexagon	3 to 4
"	" octagon	" octagon	$\sqrt{5}$ to $\sqrt{(8)-2}$

Let $\pi$ = the diameter of a circle.	$\pi^3$ = convex surface of cylinder.
$\pi \div 2$ = radius.	$\pi^3 \div 4$ = area of circle.
$\pi^2$ = circumference.	$\pi^4 \div 6$ = solidity of sphere.
$\pi^2$ = area circumscribed square.	$\pi^4 \div 4$ = solidity of cylinder.
$4\pi$ = perimeter of circum. square.	$\pi^4 \div 12$ = solidity of cone.
$\pi^2 \div 2$ = inscribed square.	$6\pi^2$ = surface of hexahedron.
$\sqrt{\pi^2 \div 2}$ = side of inscribed square.	$3\pi^3 \div 2$ = surface of cylinder.
$4\sqrt{\pi^2 \div 2}$ = perimeter of in. square.	$\pi^2 \div 4$ = arc of quadrant.
$\pi^3$ = hexahedron.	$\pi^2 \div 2$ = semicircle.
$\pi^3$ = surface of sphere.	$\sqrt{2\pi^2}$ = diagonal of square.

D'Israeli has arranged the "six follies of science," as follows:

1. The quadrature of the circle. 2. The duplication of the cube.
3. The perpetual motion. 4. The philosopher's stone. 5. Magic.
6. Astrology.

De Morgan says he ought to have added the trisection of an angle, so to have made the mystic number seven.

Another anonymous author has arranged the 12 follies as follows:

MATHEMATICAL.

1. The discovery of *prime* numbers.
2. The *duplication* of the cube.
3. The *trisection* of an angle.
4. The *quadrature* of the circle.
5. The *irreducible* case.
6. The theory of *parallels*.
7. The *rotation* of the moon.
8. The *perpetual* motion.

MYSTICAL.

1. The *elixir* of life.
2. The philosopher's *stone*.
3. The making of *gold*.
4. Natural *magic*.

A bibliography of books on, and inventions for, perpetual motion was published in London, 1861, 8vo., entitled "Perpetuum Mobile: or Search for Self-Motive Power," by Henry Dircks.

Gen. T. Perronet Thompson has published in his "Geometry without Axioms," a list of thirty titles on the "Theory of Parallels," the heads of which are in the "Penny-" and "English-Cyclopædias," *Art.* "Parallels."

Lagrange, in one of the later years of his life, imagined that he had overcome the difficulty. He wrote a paper, which he took with him to the Institute, and began to read it; but in the first paragraph he saw something he had not before observed; he muttered "*Il faut que j'y songe encore*," and put the paper in his pocket.

Johnnes Von Gumpach has published his work on "The Moon's Rotation on her Axis," London, 1856, and gives 34 titles on the discussion of the subject. He says her rotation is "a bare physical impossibility."

Chambers' Encyclopædia, *Article*, "Quadrature of the Circle," says:

"If an equation could be discovered for  $\sqrt{a} + \sqrt{b}$ ,  $a$  and  $b$  representing irrational quantities, it would be welcomed as the solution of the grand problem."

Theodore Faber proposed the following equation as that desideratum:  $\sqrt{a} + \sqrt{b} = \sqrt{a + b + \sqrt{4ab}}$ . The result is however an



irrational quantity as the area of a circle and equal to a parallelogram and convertible into a square by the usual rules, but not a *square* by his New Law in Geometry. That square will forever lack one square unit, however infinitesimal the measure-unit may be assumed.

In 1872, a work was published in London, entitled "A Budget of Paradoxes," by Prof. Augustus De Morgan, of Trinity College, Cambridge. It is composed of the collected articles, correspondence, reviews of books, etc., by Mr. De Morgan, published in the London *Athenæum* from 1863 to 1870. In this work of 512 pages there are mentioned the names of 75 writers on the subject of "Cyclometry." Mr. De Morgan has reviewed the works of 42 of these writers, giving the results of their search for the value of  $\pi$ , bringing the subject down to 1870. The entire list has been compiled and tabulated by the writer of this monograph, which will accompany this paper. An examination of the compilation does not reveal the name of a single American author or book on the subject of "Cyclometry."

Of the 100 titles given in this bibliography, 52 are bound volumes, 32 are pamphlets, 7 are broadsides, and the remaining 9, including one manuscript, are communications to the press. These books have not been collected as a specialty, but are what naturally find their way on a variety of subjects into a mathematical collection of 700 or 800 volumes, and 500 or 600 pamphlets on "the bewitching science" of mathematics.

Those who desire to investigate these works, and the ingenious methods proposed to find the value of  $\pi$ , can fully satisfy themselves that there are many roads to Rome. Many of the works are elaborate, and accompanied with artistic plates, and ample diagrams.

The results of the writers of the 100 titles are tabulated and classified at the end, with other tables for comparison :

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*Errata.* The following figures should be corrected in the following pages :

Page 110, sixth line from bottom, make the fifth decimal figure a 9.

Page 112, eighth line from bottom, strike out the seventh decimal figure 3 from both decimals.

Page 130, tenth line from bottom, strike out the fifteenth and sixteenth decimal figures 46 ; also, insert figure 1, after the third figure 1 in the denominator of the fractional series.

## *Bibliography—Cyclometry and Quadratures.*

ADORNO, JUAN NEPOMUCENO. Introduction to the Harmony of the Universe; or Principles of Physico-Harmonic Geometry. Plato said, "The Great Geometrician is God." The harmony of the universe proves the truth of this sublime sentence. Royal 8vo, cloth, pp. 160. 72 elaborate diagrams. London, 1851.

This is a very elaborate work on harmony, proportion, analogy, and ratio. The author says that he is convinced that "the circumference of any circle to its diameter is precisely as 22 to 7, a proportion considered by Archimedes as an approximation only." His ratio corresponds with that of William A. Myers, 3.142857 $\frac{1}{7}$ .

ANGHERA, DOMENICO, REV. Quadratura del Cerchio. 8vo. cloth. Malta, 1858.

This priest says: "The circle is four times the square inscribed in its semicircle." Hence his area is .80, and his ratio is 3 $\frac{1}{2}$ , or 3.2.

BADDELEY, WILLIAM. Mechanical Quadrature of the Circle—*London Mechanics' Magazine*, August, 1833.

"From a piece of carefully rolled sheet brass was cut out a circle 1 $\frac{9}{10}$  inches diameter, and a square 1 $\frac{7}{10}$  inches diameter. On weighing them they were found to be of exactly the same weight, which proves that, as each are of the same thickness, the surfaces must also be precisely similar. The rule, therefore, is that the square is to the circle as 17 to 19."

Hence this would make his ratio, 3.202216 $\frac{24}{881}$ ; area, .800554 $\frac{6}{881}$ .

ANONYMOUS. Resumé for Analytic Exercise. 4to. Construction:

To determine the point towards which an infinite descending series of triangles tend to a final term, being the limit of that segment of spiral which is the evolute of the quarter-circle.

To show the relations of lines representing the third root of quantities which are to each other as one and two, and the angle of the radius with the spiral which results from constructing the equation of the "two mean proportionals."

To transfer to any portion of the arc the conditions for its division into the same proportional parts as those of the semi-circle divided by the radius.

The author presents diagrams of circles and triangles combined, and shows that the radius of one circle is " $AB = \frac{1}{8}\pi \div 4$ ," (which, if we understand him rightly,) = .26179387+, the ratio, 3.1415926535+.

**BENNETT, JOHN.** Original Geometrical Illustrations ; or the Book of Lines, Square, Circles, Triangles, Polygons, &c., showing an easy and scientific analysis for increasing, decreasing, and altering any given circle, square, triangle, ellipse, parallelogram, polygon, &c., to any other figure containing the same area, by plain and simple methods, laid down agreeably to mathematical demonstrations; intended as a complete instructor to the most useful science of Geometry and Mensuration. 4to. cloth, pp. text, 70; plates, 54. Frontispiece, a diagram—The Circle, Square, and Triangle—primitive geometrical figures. London, 1837.

[Second Book.] The Arcanum, Comprising a Concise Theory of Practical Elementary and Definite Geometry ; exhibiting the Various Transmutations of Superfices and Solids ; obtaining also their Actual Capacity by the Mathematical Scale ; including Solutions to the yet Unanswered Problems of the Ancients—The Circle, Square, and Rectangle of Similar Areas. 8vo. cloth. pp. 48. 176 diagrams. Frontispiece, a diagram—The Problem of Napoleon Buonaparte to his Staff, resolved and drawn by John Bennett. London, 1838.

Mr. Bennett says that the problem of corresponding areas of the square and circle “has remained altogether in obscurity; although rewards were offered by Charles V, of 1000 crowns; and the States of Holland a similar sum, to any person effecting it; but it does not appear to ever have been performed.” He quadrates the circle thus:

“The transverse of the circle being divided into 26 equal parts, 21 of those parts are found to occupy one-fourth of the circumference.”

Then he constructs the equi-areal square by intersecting the circumference at the 8 points of the 84 parts in the circumference, leaving 12 parts without the circumference and then 9 parts within the circumference, alternately. This is a mechanical quadrature, and give for a ratio,  $\frac{84}{18}$ , or  $3.230769\frac{2}{18}$ ; area,  $.807692\frac{16}{189}$ , which is not in accord with his elaborate and artistic diagrams throughout his works.

**BENSON, LAWRENCE SLUTER.** Scientific Disquisitions concerning the Circle and Ellipse; a Discussion of the Properties of the Straight Line and the Curve, with a critical examination of the Algebraic Analysis. “If a better *system's* thine, impart it frankly, or make use of mine.” 12mo. cloth, pp. 94. Aiken, S. C., 1862.

Prof. Benson has published some twenty pamphlets, more or less on the area of the circle, three volumes of philosophic essays, and one geometry—“The Elements of Euclid and Legendre, Excluding the *Reductio ad Absurdum*. Reasoning.” He endeavors to demonstrate

that the area of the circle is equal to  $3R^2$ , or the arithmetical square between the inscribed and circumscribed squares. His theorem is : "The  $\sqrt{12} = 3.4641016+$  is the ratio between the diameter of a circle and the perimeter of its equivalent square." The ratio between the diameter and circumference, he believes, is not a function of the area of the circle. He accepts the value of  $\pi = 3.141592+$ ; but the area of the  $\bigcirc$ , he believes, is  $\bigcirc = 3R^2$ , or .75.

**BROWER, WILLIAM., M. D.** The Quadrature of the Circle ; being a full Exposition of the Problem. 8vo. pamphlet, pp. 16. 4 plates. Philadelphia, 1874.

The entire pamphlet is devoted to geometrical constructions and algebraic equations. According to his demonstration, he says :

"The circle is equal to the inscribed square,  $+2\frac{1}{2}(\text{side of inscribed square}) \times (\text{width of quadrantal segment})$ ,  $+2(\text{side of inscribed octagon}) \times (\text{width of octagonal segment})$ ,  $-2(\text{width of octagonal segment}) \times (\frac{1}{2}\text{side of inscribed square} - \frac{1}{2}\text{side of inscribed octagon} - \text{width of quadrantal segment})$ ."

Dr. Brower is ingenious and goes through many demonstrations, but the two triangles which he calls analogues are not similar, as he supposes, and therein lies his error. His first trial for the ratio results in  $3.152075+$ , which he finds greater than the accepted ratio, and he concludes that a certain segment is less than  $x$ , an unknown quantity.

**BOYAI, JANOS.** . La science absolute de l'espace. 8vo. Paris, 1868.

We have never seen this work.

**BOUCHÉ, CHARLES P.** The Regulated Area of the Circle; and the Area of the Surface of the Sphere. 8vo. pamphlet, pp. 64. Cincinnati, Ohio, 1854.

Mr. Bouché says in the year 1823 he fixed the ratio to be  $3\frac{1}{8}$ , or  $3.160493827\frac{1}{8}$ ; but "in 1833 he found himself constrained to correct it to  $3.1684+$ ; and later he found himself compelled to correct this." He finally made the ratio,  $3.17124864+$ . The first ratio ( $3\frac{1}{8}$ ) was first developed by M. de Fauré in his "Dissertation, Découverte, et Démonstrations de la Quadrature Mathématique du Cercle," Geneva, 1747; and "Analyse de la Quadrature du Cercle," Hague, 1749, mentioned by De Morgan in his "Budget of Paradoxes," p. 89. This same ratio was developed by Theodore Faber in 1865.

B., G. W. Squaring the Circle ; the Exact Circumference. — *Manufacturer and Builder*, Vol. III, No., 2, p. 31, February, 1871, Mr. G's constructed diagram, and proposition amounts to this :

"When we draw an equilateral triangle, of which each side is equal to the diameter of a given circle, one-fourth of the circumference will be equal to the radius plus one-third of the perpendicular of this triangle."

This proposition gives for the ratio,  $3.1547005+$ , a number larger than a circumscribed polygon of 48 sides.

CARRICK, ALICK. The Secret of the Circle ; its Area Ascertained. Second edition. 8vo. pp. 48. London, 1876.

Mr. Carrick, with the help of ten diagrams, some colored, concludes that the ratio is  $3\frac{1}{4}$ , or  $3.142857\frac{1}{4}$  ; and its area,  $.785714\frac{1}{4}$ . He ends his essay with these words ; *Patet omnibus veritas, multam ex illâ etiam futuris relicta est.*

CART, FRANCIS GUERIN. The Problem of Centuries ; What is the True Relation of Circumference to Diameter ? Diagrams.—*News and Courier*, (Charleston, S. C.) August 2, 1876.

Mr. Cart denies the universal correctness of the "47th of Euclid." He took out a copyright of his new discoveries, September 14, 1875. under the title, "New light on an old subject, or an analysis of the present received science of geometry, showing its errors and revealing the truth." His proposition is as follows :

"The area of the circle is equal to the area of its circumscribed square minus the area of a rectangle whose height is one-half the radius and whose side is the altitude of an equilateral triangle having the diameter for its base."

Hence his area of circle is  $1 - \frac{1}{4}\sqrt{75}$ , or  $.78349364+$  ; this makes the ratio,  $3.13397456+$ . He deduces it from  $3\frac{209}{1580}$ , or  $3.1339745+$ .

CARTER, R. KELSO CAPT. The Quadrature of the Circle ; an Answer to Prof. Lawrence S. Benson's Proof that the Area of the Circle is Equal to Three Times the Square of the Radius. 8vo. pamphlet, pp. 16. Chester, Pa., 1876.

Capt. Carter says, "Prof. Benson's method of proof is so ingeniously conducted that a very close study is necessary to discover its fallacy." Prof. Benson believes that the area of a circle is equal to  $3R^2$ , or  $.75$ , and that the area is not a function of the ratio.

CHASE, PLINY EARLE., LL.D. Approximate Quadrature of the Circle. Published June 16, 1879. Haverford, Penn.

"On the rectangular co-ordinates  $X, Y$ , lay off, from a scale of equal parts,  $AB=3$ ,  $AC=20$ ,  $AX=60$ ,  $AD=9$ . Join  $DC$ , and draw  $DE$  parallel to  $DC$ . Take  $EY=AC$ , and join  $XY$ . Then

$XY : AC :: \text{circumference} : \text{diameter, nearly.}$ "

This gives the ratio,  $3.14158499+$ .

CLARYVANCE, J. Geometrical Approximations of the Quadrature of the Circle. 8vo. London, 1852.

We have never seen this work neither a notice nor review, only a catalogue announcement.

CRABB, NORMAN. Geometrical Square Root; a Circle Quadrated, and other problems. 16mo. pamphlet, pp. 29. Chicago, Ill., 1879.

Mr. Crabb says the "rule he has adopted for quadrating a circle has never been published or taught." He gives twelve problems and ten diagrams in his little work and finds the ratio to be  $3\frac{1}{4}$ , or  $3.142857\frac{1}{4}$ . This is the same ratio that William A. Myers, and Juan Nepomuceno Adorno arrived at in their elaborate treatises.

CRAIGE, JOHN. Methodus Figurarum Lineis, Rectis and Curvis, comprehensarum Quadratus determinandi. 4to. pp. 43. London. 1685.

This work seems to be a discussion of quadratures in general.

DAVIES, CHARLES, LL.D. An Examination of the Demonstrations of Davies' Legendre, showing how the Polygon becomes a Circle, by the Methods of Newton. 12mo. pamphlet, pp. 36, New York, 1873.

Prof. Davies reviews his own edition of Legendre, elucidating various methods by the principles of the Calculus, and makes them the foundations of mathematical science. He demonstrates the usually accepted ratio,  $3.141592+$ , sometimes designated "the orthodox ratio."

DAVIS, JOHN. The Measure of the Circle. The Use and Importance of the Measure, discovered in January, 1845. 8vo. cloth, pp. 156. Providence, R. I., 1854.

Mr. Davis says: "In confidence, I have found the point; to find the circumference of any circle, great or small: multiply the diameter by  $9\frac{5}{16}$ , and divide the product by 8; this gives you the perfect circumference, in all cases." Hence his ratio is  $\frac{19}{8}$ , or  $3.166666\frac{2}{3}$ .

DEMEDICI, CHARLES. The New Science—Mathematical Commensuration. 12mo. cloth, pp. 196. 50 diagrams. Chicago, 1883.

DEMEDICI, CHARLES. *The Medician Theorem ; a Scientific Exposition of the Geometric Paradox ; founded on newly discovered facts.* 4to. pp. 4, chart. New York, 1885.

*The Theorem*—"Sides of inscribes squares are to sides of circumscribed squares, as sides of any squares are to the diagonals of the same square ; and the number  $\frac{22}{7}$  expresses finitely the exact ratio common to the sides and the diagonals of any square."

Mr. DeMedici's work is a full exposition of the subject. He quotes Bernoulli's proposition :

"If the number 4 be divided by 1, 5, 9, 13, and every fourth number in succession, and afterwards by 3, 7, 11, 15, and every fourth number thereafter, the difference between the sum of the first set of quotients and that of the second is equal to the ratio of diameter to circumference." Ratio,  $\frac{208}{289}$ , or  $3\frac{41}{289}$ , or  $3.1418685\frac{85}{289}$ .

DINGLE, EDWARD. *Balance of Physics. Square of the Circle, and the Earth's True Solar and Lunar Distances discovered and demonstrated, as by astronomical facts in the Eclipses.*—"The secret of the Lord is with them that fear him, and it is for them to know."—PSALM XXV, 14. 8vo. cloth, pp. 246. London, 1885.

This work, like J. N. Adorno's and Wm. A. Myers's, is very elaborate in its computations applied to the universe in all its ramifications. His demonstrations are that the ratio is  $3\frac{1}{7}$ , or  $3.142857\frac{1}{7}$ .

DIRCKS, HENRY, LL.D. *Chimeras of Science : Astrology, Alchemy, Squaring the Circle, Perpetuum Mobile, etc.* 12mo. cloth, pp. 48. 6 plates. London, 1869.

He says, refering to Arago, that "the area of the space included within a circle of thirty-eight millions of leagues radius, may be determined with such a degree of precision that the probable error shall not exceed the space of a mite." He presents James Smith's diagram and demonstration of the ratio,  $3\frac{1}{8}$ , or  $3.125$ , claiming to be a simple and exact method and sufficiently demonstrative.

DRACH, S. M. *On the Circle-Area, and Heptagon-Chord.* 8vo. Plate.

"From 3 diameters deduct 8-thousandths and 7-millionths of a diameter ; to the result and five per cent. The ratio,  $3.14156265+$ ."

"DURHAM," (N. H.) *How to Square the Circle.*—*The Sun*, (N. Y.), August, 1878.

*Proposition*—"Let it be assumed that the area of the circle is equal to the excesses of four squares over four circles described within the squares whose diameters and sides are equal. If this proposition can



be geometrically demonstrated, the area of a circle can be deduced as a corollary from said demonstration, for it makes the area of five circles equal to the area of four squares, and consequently the area of a circle equal to four-fifths of the square of its own diameter."

Hence his area is .80, and his ratio, 3.2.

**FABER, THEODORE.** Mathematical and Philosophical Manifesto, declaring numerous theorems, problems, postulates, corollaries, axioms, propositions, rules, and facts, hitherto unknown in science, and naturally growing out of the Extraordinary and Most Significant Discovery of a Lacking Link in the demonstration of the world-renowned Pythagorean Problem, utterly disproving its absolute truth, although demonstrated as such for twenty-three centuries; and by this discovery establishing the fact of the Perfect Harmony between Arithmetic and Geometry as a Law of Nature; and calculated to settle forever the famous dispute between the two Great Philosophic Schools. 8vo. pamphlet, pp. 34. New York, 1872.

Mr. Faber published his "New Mathematical System" first in 1865. In 1879, he published his third pamphlet, "A New Law in Geometry, leading to the Solution of Unsolved Problems." "An eternal geometrical difference between a square and a so-called irrational quantity." He denies the universality of the "47th problem of Euclid," the only few cases of its exact application being special cases or coincidences; that a circumscribed square is not equal to two inscribed squares. He demonstrates the ratio to be  $3\frac{1}{8}$ , or 3.160493827 $\frac{1}{8}$ , the same as that of M. de Fauré, in 1747, and that of Charles P. Bouché, in 1823, which after ten years he abandoned. Mr. Faber's ratio,  $3\frac{1}{8}$ , is a square whose root is  $1\frac{1}{2}$ , which root also is a square whose root is  $\frac{1}{2}$ , or  $1\frac{1}{4}$ . His area of the circle, .790123456 $\frac{1}{8}$ , is a square whose root is .88888 $\frac{1}{8}$ . Circumscribed square being 1; inscribed square =  $(.7\frac{1}{4})^2 - \frac{1}{16}$ .

**FERREL, WILLIAM.** Converging Series expressing the Ratio between Diameter and the Circumference. 4to. pp. 6. (Smithsonian Contributions to Knowledge, No. 233). Washington, 1871.

He says the paper is "a method for obtaining converging series expressing the value of  $\pi$ , and the series obtained, are thought to be new." The result produced is the accepted value of the ratio, 3.141592+.

**FLEMING, PETER.** Geometrical Solutions of the Quadrature of the Circle. Large 4to. cloth, pp. 10. 6 plates. Montreal, 1850.

Mr. Fleming says: "When the length of the circumference of a given circle can be found, or resolved into a straight line, the quadra-



ture of the circle is accomplished. It is now the solution of this problem which the writer presumes to lay before the public."

FLEMING, PETER. Geometrical Solutions of the Length and Division of Circular Arcs ; the Quadrature of the Circle, Trisection of an Angle, Duplication of the Cube, and the Quadrature of the Hyperbola. 8vo. cloth, pp. 40. 5 plates. Montreal, 1851.

This is a new edition of the former work elaborated with additions.

"FINALITY, A." The Circle Squared. — *Courier*, Boston, Mass., January 28, 1872.

This cyclometer says that "the arc of each six equal segments gains  $\frac{1}{8}$  of each chord in length ; therefore, the proportion is  $\frac{1}{8}$ , and hence his ratio is 3.16666 $\frac{2}{3}$ ." Area, .791666 $\frac{2}{3}$ .

FISHER, THOMAS. Mathematics Simplified and made Attractive ; or the Laws of Motion Explained. 8vo. cloth, pp. 128. 19 plates. Philadelphia, 1853.

Mr. Fisher devotes pages 56-76 to the subject of the circle. He says no other method has been devised, and he believes never will be, that the area of a circle can be obtained, than that by the "method of exhaustions." He concludes that the ratio is the usual orthodox value, 3.141592+. He closes his book with a poem of sixteen stanzas on the "The Creation of Light."

"FUTURUS." The Quadrature of the Circle ; a Puzzle for Mathematicians. Glasgow journal, May, 1853.

Construction of diagram : "Make  $ABC$  a right angle, angle at  $B$ . Make  $AB = \frac{1}{8}$ diameter,  $BC = \frac{1}{8}$ diameter,  $BD = \frac{1}{8}$ diameter,  $BE = \frac{1}{8}$ diameter, and  $BF = \frac{1}{2}$ diameter, (the latter  $BF$  on perpendicular.) Join  $AC$ ,  $AD$ ,  $AE$ , and draw through  $F$  a straight line cutting  $AE$  at  $H$  and meeting  $AC$  at  $G$ , so that  $HG = ED$ . Then  $2BC + FG = \pi \times \text{diameter} \div 4$ , whence may be derived the square."

Therefore, his ratio is 3.1238093 $\frac{1}{2}$ , and the area, .7809523 $\frac{8}{21}$ .

GEE, WILLIAM F. A New System of Geometry successfully applied to the Solution of the Square of the Circle ; published as a Supplement to the Geometry of the present time. 12mo. cloth, pp. 68. Charleston, S. C., 1859.

Mr. Gee's calculations result in a combination of the commonly received ratio and the decimal of one-seventh. His ratio seems to be 3.141592697774542 $\frac{1}{7}$ . Area, .785393174443635 $\frac{1}{7}$ .

GIDNEY, CHARLES T. The Ratio of Circumference to the Diameter of the Circle.—*Troy* (N. Y.) *Standard*, October 2, 1878.

Mr. Gidney works by a series of algebraic equations numbering 1350, from which he develops the ratio, 3.135135+.

GOODSELL, SAMUEL C. A Book of Stubborn Facts; appreciating unknown conditions at the Base of Construction of Plane-Figures; the Square the only Regular Polygon of Known Area, and the reason why; proving circumference  $\div$  diameter to be the consequent of dividing 4 times the least by  $\frac{9}{10}$  the greatest diameter of the square; and the circumference of the greatest diameter of the square to be  $\frac{10}{9}$  the sum of the four sides. Also, the area of the circle to be circumference<sup>2</sup>  $\times$  .08, or diameter<sup>2</sup>  $\times$   $\frac{8}{11}$ , and solidity of the sphere = diameter<sup>3</sup>  $\times$   $\frac{1}{4}\frac{2}{3}$ . The ratio of diameter to circumference being a sequent of diameter, line and area, we may safely lay aside the Geometer's Approximate for the more delicate Ratio of Pure Mathematics; Containing valuable tables, such as natural sines, tangents, etc., etc., of improved exactness. Tables of equal line and relative area — of equal area and relative line — of unknown figures. Also, round and square diameters of numbers; area and circumference of circles, solidities of the spheres, etc., etc.; short comprehensive formulæ pertaining to line and area, illustrating the maxim, — "Truth may languish, but never die." 8vo., New Haven, Conn., 1875.

Diameter of  $\square$  being 1, the  $D. = \sqrt{1 \text{ area}}$ ,  $L. = \sqrt{16 \times \text{area}}$ ;  
 $R. = \sqrt{16 \times 1}$ .

Diameter of  $\circ$  1, the  $D. = \sqrt{\frac{8}{11} \text{ area}}$ ;  $L. = \sqrt{12\frac{1}{2} \times \text{area}}$ ;  
 $R. = \sqrt{12\frac{1}{2} \times \frac{8}{11}}$ .

The title-page of the prospective work indicates the results of his formulæ. His ratio is 3.1426968+. Area, .7856742+.

GOULD, LUCIUS D. A Practical and Mathematical Demonstration of Finding the Circumference, and Squaring the Circle, when the Diameter is given.—From "The Carpenter's and Builders's Assistant and Wood-Worker's Guide." 8vo. pp. 2. New York.

"To find the side of a square, the area of which shall be equal to the area of the circle, divide the diameter of the circle by 14 and multiply the quotient by 11; add to the product  $\frac{1}{10}$  of the diameter, and *annex* the first figure of the quotient."

This rule results from the ratio  $\frac{22}{7}$ , or 3.142857+. Mr. DeForest P Lozier, of Newark, N. J., also supports this ratio.

GRAY, J. H. A General Formula for Inscribed Polygons. — In the *Ohio Educational Journal*.

Prof. Gray's reduction fills a full page, and the last result is this :

$$2^7 \times \sqrt{2 - \sqrt{2 + \sqrt{2 + \sqrt{2 + \sqrt{2 + \sqrt{2 + \sqrt{2}}}}}}} = 128 \times .024543 = 3.1415 +.$$

GROSVENOR, CYRUS PITT. The Quadrature of the Circle Perfected, or the Circle Squared ; in which the method is stated and demonstrated for determining with perfect accuracy the area of any circle of a given radius, and the length of its circumference ; and consequently the length of any arc of the circumference ; which is done according to geometrical principles, and not on the schemes hitherto employed by mathematicians, by which only approximation to the truth has ever been accomplished. Together with rules for practical mensuration of curvilinear figures, both plain and solid. 4to. pamphlet, pp. 10. Plates and diagrams. New York, 1868.

His rule for the area is stated as follows :

" Square the diameter of any circle, multiply the square by two, extract the square root of the product, from the root subtract the diameter of the circle, square the remainder, multiply this square by five-fourths, subtract the product from the square of the diameter of the circle."

Rev. Mr. Grosvenor's ratio is 3.142135623730905068+, and the area, .785533905932726267+.

HARBORD, H. The Circle Squared, From *Hull and Eastern Counties Herald*, (England), February 27, 1868.

Mr. Harbord's calculations are to find the *finite* value of  $\pi$ . His results are as follows :

Ratio : 3.14159265358938193239974916.  
 Square root of ratio : 1.7724538509054.  
 Side of a square : .8862269254527.  
 Area of circle : .78539816339736548309993729.

HART, DAVID S. Quadrature of the Circle. The sum of the infinite

series,  $\frac{8}{1 \times 3} + \frac{8}{5 \times 7} + \frac{8}{9 \times 11} + \frac{8}{13 \times 15} + \frac{8}{17 \times 19} \&c.,$

*ad infinitum*, if it can be found, will solve the problem. Proposed in the *Yates County Chronicle*.

James Smith says this series calculated to 50 terms makes the ratio less than 3 133+, and to whatever number of terms carried the sum can never be made to reach 3.14.

HARRIS, JOHN. (Kuklos.) The Circle and Straight Line. Parts I, II, III. Plates. 3 Volumes, and Supplement. 8vos. cloth, pp. 42, 56, 26, 26. Montreal, 1874.

These volumes are elegantly executed mechanically, the plates being in separate volumes. He demonstrates the ratio to be  $3.142696+$ . Area,  $.785674+$ .

HERSCHEL, A. S. (Collingwood, Eng.) On an Approximate and Graphical Rectification of the Circle. — *The Mathematical Monthly*, Vol. III, No. 5, pp. 152-155, February, 1861. (From the London *Quarterly Journal of Pure and Applied Mathematics*, October, 1868.

The value of the ratio is founded on the singularly close relation that is made by the angle  $\tan^{-1}(\frac{1}{4}\pi)$  to a root of the equation  $\sec x = \cot x$ . This results in the form  $\cos x = \tan x = \sqrt{\frac{\sqrt{(5)}-1}{2}} = .7863+$ . While  $\frac{1}{4}\pi = .7853+$ .

HILL, THOMAS. An Elementary Treatise on Curvature ; also, a Fragmentary Essay on Curves. 8vo. pamphlet, pp. 30. Boston and Cambridge, 1850.

Prof. Hill's treatise is a specialty on curves discussing first principles of curves. He deduces the usually accepted ratio,  $3.141592+$ . The essay is exemplified by the problem found in Gill's *Mathematical Miscellany*, May, 1839, p. 43, and solved by Prof. Benjamin Peirce, the proposer: "Find a curve which is its own evolute." The involute and evolute of the circle are correlate, and the evolute of any algebraic curve is rectifiable.

HORNISH, J. K., President and General Manager of the Vulcan Smelting and Mining Company, Denver, Col., 1885. MS. 4to.

Mr. Hornish's Ratio is  $3\frac{6}{8}$ , or  $3.15625$ . We are not aware that he has yet published his demonstration.

HOBBS, THOMAS, of Malmsbury. *Decameron Physilogium*; or, The Dialogues on Natural Philosophy; to which is added the Proportion of a Straight Line to Half the Arc of a Quadrant. 12mo. pamphlet, pp. 136. London, 1678.

The author says of his proposition "for the demonstration whereof, we must assume certain known Truths, and Dictates of common Sense." His value of the ratio is  $\sqrt{10} = 3.1622777+$ .

**HOULSTON, WILLIAM.** The Circle Secerned from the Square, and its Area Gauged in terms of a Triangle common to Both ; also, an Original, Simple and Exact Method pointed out approximating as closely as possible to the numerical value of the Triangle, and the consequent veritable Content of the Inscribed Circle, in Relation to any given Square. 4to. pamphlet. pp. 22. London, 1862.

Mr. Houlston's treatise is unique, being interspersed with seventy-four quotations from the poets of all past ages. He makes the ratio,  $3.14213562378+$ . Area,  $.78553390593+$ .

**HUDSON, W. H.** New and Demonstrative Solution of the Geometric Quadrature of the Circle and the Geometric Mean. Indian Chronological Tables. Portrait. 8vo. 3 plates. Calcutta, 1831.

**JACKMAN, ALONZO, LL.D.** The Circle Squared. 12mo. pamphlet, pp. 8. Northfield, Vt., 1876.

Prof. Jackman of the Norwich University, also published these geometrical demonstrations in quarto form first in 1872, second in 1873 ; hence this pamphlet is the third edition. He substantiates the commonly received ratio,  $3.1415926535+$ .

**JACKSON, EDWIN W.** A Geometric System for the Measurement of The Area of a Circle, or any of its Sectors. 8vo. pp. 22. 21 plates. New Brunswick, 1826.

He demonstrates that "the circle is conceived to be a polygon of an infinite number of sides and equal to a triangle, the base being equal to the periphery, and its altitude to the radius, therefore, the square, when thrown into an angle of this description, will give the periphery."

**MAY, JOHN.** The Theory and Construction of the Quadrature of the Circle ; also the Globe or Ball reduced to the Cube, and two New Measures—The Octans, with the Inclination of the Perpendicular Line. 8vo. pamphlet, pp. 20. 4 plates. Philadelphia, 1866.

Mr. May finds the ratio to be  $3\frac{6}{25}$ , or  $3.24$  ! Area of circle  $= .81$ .

**MERCERON, D. S.** The Square Root of Surds ; The Solution of the XLVIIth Problem of Euclid, and Square of Circle, with True Method of Finding the Circumference. 8vo. pp. 13. Baltimore, 1848.

Mr. Merceron's rule is : "Multiply the chord of the arc of  $90^\circ$  by 5, and divide the product by 4, and the quotient will be the circular square-root, which, when multiplied (squared) will give the square area of the circle." He makes the ratio to be  $3\frac{1}{8}$ , or  $3.125$ . Area of circle,  $.78125$ . This ratio is the same as that of James Smith who had an elaborate discussion with several of the leading mathematicians

of Europe. Mr. Smith published this correspondence in five octavo volumes, a total of 1988 pages, the correspondence beginning in 1859 and ending in 1872, a period of 13 years. He was reviewed at length by De Morgan in his "Budget of Paradoxes."

MORTON, JAMES. The System of Calculating Diameter, Circumference, Area, and Squaring the Circle; together with interest, miscellaneous tables, and other information. 12mo. cloth, pp. 144 Philadelphia, 1879.

Mr. Morton says that it is not his purpose to introduce to the public any new principle, but "the result of laborious calculations culminating in the final elucidation of facts." He finds, therefore, the ratio to be  $\frac{402.123859659493567+}{128}$  or  $3.141592653589793+$ .

MURDOCK, W. D. C. A Demonstration of the Quadrature of the Circle. pp. 8. Without date or place of publication. Announced in *The Mathematical Monthly*, Vol. III, No. 11, p. 356, August, 1861. We have never seen a copy of this quadrature.

MYERS, WILLIAM ALEXANDER. The Quadrature of the Circle, the Square Root of Two, and the Right-Angled Triangle. First Ed., 1873. "Where is the wise."—1st Cor. 1, 20. "Now the serpent was more subtle than any of the beasts of the field which the Lord God had made."—Gen. III, 1. Second edition. 16 plates. 8vo. cloth, pp. 164. Cincinnati, Ohio, 1874.

The introduction comprises 64 pages giving a history of the problem and attempts at the solution, translated from the French of Montucla, by J. Sabin, Louisville, Ky. The author then proceeds to the "geometrical and final solution of the quadrature of the circle by an entirely new method, together with ample proofs of the same," as he says. He finds the ratio to be  $3\frac{1}{7}$ , or  $3.142857\frac{1}{7}$ .

PARKER, JOHN A. Quadrature of the Circle, containing Demonstrations of the Errors of Geometers in finding the Approximations in Use; with an appendix, and practical questions on the quadrature, applied to the astronomical circles; to which are added lectures on polar magnetism, and non-existence of projectile forces in nature. 27 plates, and diagram. Second edition. 8vo. cloth, pp. 304. New York, 1874. [First edition, 8vo, cloth, pp. 212. New York, 1851].

Mr. Parker sums up his demonstrations and says, "the true ratio of circumference to diameter of all circles is four times the area of an

inscribed circle for a ratio of circumference to the area of the circumscribed square for the ratio of diameter." He finds the ratio to be  $\frac{20812}{8681}$ , or  $3.1415942+$ . Seba Smith of New York published his "New Elements of Geometry," in 1850, and says in the preface of that work that he is convinced of the truth of Mr. Parker's ratio.

PIERCE, GEORGE W. Squaring the Circle.—*Advertiser* (Boston, Mass.) January 2, 1883.

Mr. Pierce replies to a statement made in the same paper, December 26, 1882, saying that M. Lindemann had proved that the usually accepted value of  $\pi$  "cannot be the root of any algebraic equation whatever with rational coefficients." This Mr. Pierce denies, and says that

$$\pi = 2^{\text{th}} \times \sqrt{2 - \sqrt{2 + \sqrt{2 + \sqrt{2 + \sqrt{2 + \sqrt{2 + \sqrt{2 + \sqrt{2}}}}}}}} \&c.$$

to  $n$  radicals, when  $n$  is equal to infinity, each radical sign covering all that follows, this being the perimeter of an inscribed regular polygon of 2 to the  $n$ th power sides, this expression being the root of an algebraic equation with rational coefficients."

This expression is the same in result as that of J. H. Gray.

PLAYFAIR, JOHN. (Supplement to Elements of Geometry, containing the First Six Books of Euclid.) On the Quadrature of the Circle. 8vo. pp. 164-194. New York, 1854.

A demonstration of the method of inscribed and circumscribed polygons, or method of exhaustions, resulting in the ratio,  $3.141592+$ .

PRATT, HENRY F. A., M. D. The Mutual Relations of the Circle, the Square, the Cube, and the Sphere. 8vo. pp. 32. Appendix to "Eccentric and Centric Force. a New Theory of Projection." "All things are double, one *against* another." London, 1862.

Dr. Pratt by many analogies and comparisons finds the ratio to be  $3\frac{1}{2}$ , or 3.2.

"QUADRATOR." The Square of the Circle, and the True Ratio of the Diameter to the Circumference.

This is a communication to a newspaper. He says that sexagenary arithmetic is in harmony with revolution, rotation, cycles: and circles. He adds the two extremes of the circle and then takes the geometrical mean, thus:  $\sqrt{360 + 1} = 19$ . Then this divided by the hexagonal number, 6, because perfect, gives the ratio,  $3.166666\frac{2}{3}$ , and the area,  $.791666\frac{2}{3}$ .

ROLLWYN, J. A. S. Elementary Difficulties in Geometry : The Duplication of the Cube ; The Trisection of an Angle ; The Quadrature of the Circle. Chapter XXXIII, of " Astronomy Simplified, for general reading with numerous New Explanations and Discoveries." London, 1871. 8vo. pp. 10.

" The area of a circle is equal to three-fourths of the square of its diameter, or three-fourths of the area of the circumscribed square ; and that concurrently, twice the area of the circle is equal to three times the area of the inscribed square."

*Rule*—Multiply the diameter of the circle by itself and deduct one-fourth of the product ; the remaining quantity is the area of the circle.

Mr. Rollwyn's area is the same as that of Prof. L. S. Benson—that it is the arithmetical square between the inscribed and circumscribed squares.

ROSSI, GAETANO, of Catanzaro. Soluzione Esatta, e Regolare de-Difficillissimo Problema della Quadratura del Circolo ; Produzione Sintetica, ed Analitica. *Hæc qui spernit, id esi Semitas Sapentia, ei denuncio non recte philosophandum.*—BOETIUS. Seconda edizione. Londra, 1805. 8vo. pamphlet, pp. 108. 8 diagrams ; portrait.

The author's demonstrations result in the ratio,  $8\frac{1}{2}$ , and area, 80.

SCHOLFIELD, NATHAN. On the Rectification and Quadrature of the Circle. Part Fourth of a Series on Elementary and Higher Geometry, Trigonometry, and Mensuration ; containing many valuable Discoveries and Improvements in Mathematical Science, especially in relation to the Quadrature of the Circle, and some other Curves. 8vo. pp. 108–139. New York, 1845.

Mr. Scholfield's treatise is a learned and searching analysis on the subject of curves, segments, spirals, cycloids, revoloids, etc. He substantiates the orthodox ratio, 3.141592653589793238462643+.

SKINNER, J. RALSTON. A Criticism on the Legendre Mode of the Rectification of the Curve of the Circle. 8vo. pamphlet, pp. 22. Cincinnati, 1881.

The author says the orthodox value of  $\pi$  obtained by the Legendre method from the sides of the interior polygons is *numerical*, and not *geometrical*. The circumference of a circle is a *curve* which finally re-enters on itself and forms the boundary of the circle. The numerical values of the polygons are not indicative of the circle penned up between them. Mr. Skinner's demonstrations substantiate the ratio as found by John A. Parker, namely,  $\frac{20612}{8661}$ , or 3.1415942+.



**SHANKS, WILLIAM.** Contributions to Mathematics, comprising chiefly the Rectification of the Circle to 607 Places of Decimals. Royal 8vo. pp. 95. London, 1853.

Mr. Shanks here publishes the value of  $\pi$  to 607 decimal places. He gives the value of  $e$  (Napierian base) to 137 decimal places, the value of  $M$  (Modulus) to 137 decimal places, and the powers of 2 as far as  $2^{721}$ . He was assisted by Dr. William Rutherford in the verification of the first 441 decimals of  $\pi$ . Since the publication of this work, Mr. Shanks has found errors in the last 14 places of the 607 decimals, as printed in this book, corrected the errors, and then extended the decimals to 707 places, and they are printed by the Royal Society of London, in their Proceedings, Vol. XXI, 1873, as follows:

$\pi=3.$  141592 653589 793238 462643 383279 502884 197169 399375  
 105820 974944 592307 816406 286208 998628 034825 342117  
 067982 148086 513282 306647 093844 609550 582231 725359  
 408128 481117 450284 102701 938521 105559 644622 948954  
 930381 964428 810975 665933 446128 475648 233786 783165  
 271201 909145 648566 923460 348610 454326 648213 393607  
 260249 141273 724587 006606 315588 174881 520920 962829  
 254091 715364 367892 590360 011330 580548 820466 521384  
 146951 941511 609433 057270 365759 591953 092186 117381  
 932611 793105 118548 074462 379834 749567 351885 752724  
 891227 938183 011949 129833 673362 441936 643086 021395  
 016092 448077 230943 628553 096620 275569 397986 950222  
 474996 206074 970304 123668 861995 110089 202383 770213  
 141694 119029 885825 446816 397999 046597 000817 002963  
 123773 813420 841307 914511 839805 70985±

**SMITH, JAMES.** Relations of a Circle inscribed in a Square. pp. 6  
 Commensurable Relations between a Circle and other  
 Geometrical Figures. 1860. pp. 32  
 Quadrature of the Circle; Correspondence with an "Eminent Mathematician." 1864. pp. 188  
 Nut to Crack for the Readers of De Morgan's "Budget of  
 Paradoxes." 1863. pp. 72  
 True Ratio between Diameter and Circumference, Geometrically and Mathematically Demonstrated. 1865. pp. 102  
 British Association in Jeopardy and Prof. De Morgan in  
 the Pillory without hope of escape. 1866. pp. 96  
 Quadrature and Rectification of the Circle. 1867. pp. 74  
 Euclid at Fault, in Theorem, Proposition 8, Book VI;  
 and Theorems, Propositions 12 and 13, Book II. 1868. pp. 12

- SMITH, JAMES. Geometry of the Circle and Mathematics as applied by Geometers and Mathematicians, shown to be a Mockery, Delusion, and a Snare. 1869. pp. 416  
 Curiosities of Mathematics, Instruction of Mathematicians. pp. 98  
 The Ratio between Diameter and Circumference Demonstrated by Angles, and Euclid's Theorem, Proposition 23, Book I, Proved to be Fallacious. 1870. pp. 524  
 Cyclometry and Circle-Squaring in a Nutshell. 1871. pp. 44  
 Why is Euclid Unsuitable as a Text-book of Geometry ? Theorems, Propositions of Euclid, 8 and 13, Book VI, Proved to be Erroneous, by Heterodox Geometers. 1871. pp. 56  
 Quadrature and Geometry of the Circle Demonstrated. Portrait. London and Liverpool, 1872. pp. 268

These works are profusely illustrated with plates, diagrams, extracts, and examples. He demonstrates the ratio to be  $3\frac{1}{8}$ , or 3.125. He credits Joseph Lacomme with finding this ratio, in 1836, who is found in De Morgan's list. Mr. Smith's works totalize 1988 pages on this subject.

SMITH, SEBA. New Elements of Geometry. Three Parts. I. The Philosophy of Geometry. II. The Demonstrations in Geometry. III. The Harmonies of Geometry. 8vo. pp. 200. New York, 1850. London edition, pp. 200, 1850.

Mr. Smith examined John A. Parker's manuscript quadrature, became convinced of the truth of it, and published his own Geometry the year previous to the publication of Mr. Parker's "Quadrature of the Circle."

SMOOTH, EPHRAIM. Measuring of Circles; the Proportion which the Diameter bears to the Circumference—*Register of Arts and Sciences*, July 8, 1826. London.

Mr. Smooth illustrates both his and Archimedes' ratio by examples, and claims that the ratio is  $3\frac{1}{8}$ .

SOMERSET, (Duke of). A Treatise in which the Elementary Properties of the Ellipse are deduced from the Properties of the Circle, and geometrically considered. Illustrated. 8vo. London. 1843.

STACY, JOSEPH. Squaring the Circle.—*Boston Herald*, April 4, 1874.

Mr. Stacy says he "has no more difficulty in obtaining the ratio than in obtaining the diagonal of a square. The circumference of a circle, as near as can be expressed in so many figures, is 3.152955+; the error is less than 1 in 75,000,000; or it makes a difference of 91 miles in the circumference, or 29 miles in the diameter of the earth."

STEELE, JAMES. Exact Numerical Quadrature of the Circle effected regardless of the Circumference, and the Commensurability of the Diagonal and Side of the Square. 8vo. pp. 75. London, 1881.

The author finds the exact area of a circle in the nonary scale, but just how he does not explain: "The circle is equal to 9 square units nonarily expressed as 10. When the circumscribed square is  $= 2$ , the circle is  $1.570796+$ ." We do not comprehend this statement.

TAGEN, JOANNEM Nep. Quadratura circuli tandem inventa, et mathematice demonstrata; cum II tabulis. Folded diagrams. 8vo. pp. 75. Cassoviæ, 1832. [His methods are very complex.]

TERRY, CONSTANT. A Problem for the World; the Circle Squared. Eagle Pass, Texas, January 20, 1871. Published in *The Investigator*, Boston, Mass., February 22, 1871.

"I demand the solution of a circle whose area, diameter, and circumference are each perfect squares."

1. Circumference 1, diameter  $= .316912650057057850374175801344$ .
2. Circumference 1, area  $= .79228162514264837593548950886$ .
3. Diameter 1, circumference  $= 3.1554436208840472216469142611-3114491869282574043609201908111572265625$ .
4. Area 100, diameter  $= 11.25899906842624$ .
5. Area 100, circum.  $= 35.52713678800500929355621337890625$ .
6. Area  $100 = \frac{1}{2} \text{circumference} \times \frac{1}{2} \text{diameter}$ .
7. Multiply area, when circumference is 1, by area, when diameter is 1, and the product is .0625.
8. Multiply diameter, when circumference is 1, by the circumference, when diameter is 1, and the product is 1.
9. Multiply square of diameter by square of circumference, when area is 100, and the product is 160,000.

Square root of (1) is .562949953421312.

Square root of (2) is .281474976710656.

Square root of (3) is 1.7763568394002504646778106689453125.

Square root of (4) is 3.3554432.

Square root of (5) is 5.9604644785390625.

THOMPSON, G. H. The Discovery of the Quadrature; announced to the world by the Divine Assistance.—In *Coram's Champion*, 1826.

Mr. Thompson's quadrature was the forerunner of that developed by Augustus Young nineteen years later in his first edition of "Ration-

**al Analysis," 1845. The prime formula upon which it was based is**

[illegible]

We do not comprehend this formula as published in *Scientific Tracts and Family Lyceum*, Vol. I, p. 157, by Augustus Young, the champion of Mr. Thompson.

**THORNTON, EDWARD.** *The Circle Squared.* 8vo. London, 1868.

Mr. Thornton's quadrature agrees precisely with Lawrence S. Benson's, in making the circle-area,  $3R^2$ , or .75.

**UPTON, WILLIAM, B. A.** The Circle Squared. Three famous Problems of Antiquity, Geometrically Solved. The Quadrature of the Circle ; Diameter definitely expressed in terms of the Circumference ; Circumference equalized by a Right Line. The whole rendered intelligible for arithmeticians as well as for geometers ; adapted for the higher classes in schools of both sexes, private students, collegians, &c. "*Mutans quadrata rotundis.*"—HORACE. 8vo. pamphlet, pp. 24. Supplement : The Circle Squared ; First — Arithmetical Summary ; Second—Geometrical Confirmation. "*Finis coronat opus.*" Plates. pp. 8. London, 1872.

**The author demonstrates the orthodox ratio, 8.14159265+, by several methods not found in our text-books.**

**VANDERWEYDE, PHILIP H., M. D.** The Philosopher's Stone : Four Essays, containing the Answer of Positive Science to the Question, What is known at present, about the Quadrature of the Circle? 8vo. pamphlet, pp. 40. New York, 1861.

Dr. Vanderweyde, for many years editor of *The Manufacturer and Builder*, has given in this essay an epitomized account of what the subject is, and then endeavors to answer it. The rectification of the circle is answered by several methods of demonstration, resulting in the ratio 3.1415926535+.

**WEATHERBY, J. G.** To find a Straight Line equal to the Semi-circumference of the Circle.—*Barnes' Teacher's Monthly*, Vol. I, p. 384, July, 1875.

Mr. Weatherby's geometrical construction and equation makes the semi-circumference of a circle of diameter 60, to be 94.6 (nearly). Hence, the ratio,  $3.15838\frac{1}{2}$  (nearly).

YOUNG, AUGUSTUS. Unity of Purpose or Rational Analysis ; being an Exposition of the Quadrature of the Circle, and the Law of Gravity. "These are not, perhaps, very attractive speculations ; they disturb old and favorite associations ; they serve to reduce many cherished traditions, much painfully acquired knowledge, to obsolete lore ; but these things are so, and we must accustom ourselves to regard them and their consequences without shrinking." Second edition. 8vo. pamphlet, pp. 36. Burlington, Vt., 1853. [First edition was published in Boston, Mass., 1846. 8vo. cloth, pp. 292].

He says his "purpose is to prove to the satisfaction of the world, that the circumference of the circle, whose diameter is unity or 1, is the third or cube root of 32, and hence that the area is the cube root of .5." He finds the ratio, 3.1748020+, and the area, .7937005+.

ZIELINSKI, AUGUST. Quadrature of the Circle. Augusta, Ga.—Published in *The Analyst*, Vol. II, No. 4, pp. 77-78, July, 1875.

Prof. Zielinski's quadrature is a mechanical one ; he says "by means of a single cycloid we can transform any circle into a square."

#### ADDITIONAL TITLES.

ANDREWS, J. B. The Squared Circle ; or the True Area of the Circle Ascertained and Demonstrated. 8vo. Belfast, 1884.

"CANTAB, A." A Hole in Smith's Circle. 8vo. pp. 15. London, 1859.

GLAISHER, J. W. L. An Approximate Numerical Theorem Involving  $e$  (Naperian Base) and  $\pi$  (the Ratio). 8vo. pp. 4. London, 1877.

GLAISHER, J. W. L. Numerical Values of the First Twelve Powers of  $\pi$ , and their Reciprocals, and of certain other related quantities. 8vo. pp. 6. London, 1877.

Five tables are given. I.  $\pi, \pi^2, \pi^3, \dots, \pi^{12}$ , to twenty-two or more decimal places. II.  $\pi^{-1}, \pi^{-2}, \pi^{-3}, \dots, \pi^{-12}$  to twenty-two or more decimal places.

LINDEMANN, M. F. Sur le Rapport de la Circonférence au Diamètre, et sur les logarithmes népériens des nombres commensurables ou des irrationnelles algébriques. (10 Juillet, 1882). 4to. pp. 4.

He says, "the number  $\pi$ , or ratio of circumference to diameter, is a transcendant number."

O'BYRNE, JOHN. An Essay on the Quadrature of the Circle. 8vo. Norfolk, Va.

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A two-column review of John A. Parker's work on the "Quadrature of the Circle" appeared in the *Independent Democrat*, Concord, N. H., May 6, 1852, written by W. L. B., of Charlottesville, Va.

# Comparison of Ratios, or Values of $\pi$ .

Names,	Ratio.	Names.	Ratio.
ANONYMOUS		Parker,	
Benson,		Skinner,	
Carter,		Smith, Seba,	$\left. \begin{array}{l} 3.1415942+ \end{array} \right\}$
Davies,		Baddely,	$3.202216+$
Ferrel,		Bennett,	$3.230769\frac{8}{18}$
Fleming,		Brower,	$3.152075+$
Fisher,		Bouché,	$3.17124864+$
Glaisher,		B., G. W.,	$3.1547+$
Hart,		Cart,	$3.1339786+$
Herschel,		DeMedici,	$3.1418685\frac{85}{289}$
Hill,	$\left. \begin{array}{l} 3.141592653589+ \end{array} \right\}$	Drach,	$3.14159265+$
Jackman,		Faber,	$3.160493827\frac{8}{11}$
Morton,		FUTURUS,	$3.123809\frac{1}{11}$
Pierce,		Gee,	$3.14159269777454\frac{7}{8}$
Playfair,		Gidney,	$3.15135+$
Rollwyn,		Goodsell,	$3.1426968+$
Scholfield,		Chase,	
Shanks,		Gray,	$\left. \begin{array}{l} 3.1415+ \end{array} \right\}$
Upton,		Grosvenor,	
Vander- weyde,		Houlston,	$\left. \begin{array}{l} 3.14213562373+ \end{array} \right\}$
Adorno,		Harbord,	$\left\{ \begin{array}{l} 3.1415926535893- \\ 8193239974916 \end{array} \right\}$
Carrick		Harris,	$3.142696+$
Crabb,	$\left. \begin{array}{l} 3.142857\frac{1}{2} \end{array} \right\}$	Hornish,	$3.15625$
Dingle,		Hobbes,	$3.1622777+$
Gould, L.D.,		May,	$3.24$
Myers,		Stacy,	$3.152965+$
Angherà,			$\left\{ \begin{array}{l} 3.15544362088404- \\ 72216469142611- \\ 31149186928257- \\ 40436092019081- \\ 11572265625 \end{array} \right\}$
DURHAM,	$\left. \begin{array}{l} 3.2 \end{array} \right\}$	Terry,	
Pratt,		Thompson,	$3.174802+$
Rossi,		Weatherby,	$3.15333\frac{1}{2}$ (nearly).
Smooth,		Young,	$3.174802+$
Davis,		Benson,	
QUADRATOR	$\left. \begin{array}{l} 3.166666\frac{2}{3} \end{array} \right\}$	Rollwyn,	
FINALITY,		Thornton,	$\left. \begin{array}{l} \text{Area, } 3R^2=.75 \end{array} \right\}$
Dircks,			
Merceron,	$\left. \begin{array}{l} 3.125 \end{array} \right\}$		
Smith, Jas.,			

Andrews,	} Ratios not stated.	Dircks,	Supports James Smith.
Boyai,		Skinner,	} " J. A. Parker.
Claryvance,		Smith, Seba,	
Craige,		Bennett,	} The only 5 mentioned by James Smith.
Hudson,		Benson,	
Jackson,		Harbord,	
Murdock,		Lacomme,	
O'Byrne,		Thornton,	
Steele,		Baddely,	} Mechanical quadratures
Tagen,		Bennett,	
Thornton,		Zielinski,	
Zielinski,			
ANONYMOUS,	} Noms de plume.	Angherá,	} The only 7 mentioned by A. De Morgan.
DURHAM,		Drach,	
FINALITY,		Hobbes,	
FUTURUS.		Houlston,	
QUADRATOR,		Rossi,	
Baddely,	} $\pi = \text{a square.}$	Shanks,	
Faber,		Smith, Jas.	
Harbord,		Hobbes,	} $\pi = \sqrt{10}$
May,		Young,	
Terry,			} $\pi = \sqrt[3]{32}$

### *Augustus De Morgan's Cyclometers.*

(From the "Budget of Paradoxes.")

The ratios of these are not stated by De Morgan.				B. P.	
Name.	Year.	Page.	Name.	Year.	Page.
Beaugrand,	1826	73	JESUIT, So. America,	1844	9
Brauardini, Thomas,	1511	136	Larriva, D. J.,	1856	459
CIVIL ENGINEER,		458	Lausbergii, Philippi	1616	46
Cusa, Nicholas,	1464	33	Macalcarne,	1825	71
De Causans,	1753	179	Philo, of Gadara,		30
De Messange, Mal.,	1686	471	Porta, John Baptiste,	1610	45
De Molina, Cano,		179	Pujos, M.,	1619	179
De Vausenville,	1778	9	Recalcatti, Prof.,		458
Dunbar, John,	1619	179	Scaliger, Joseph,	1694	67
Cluvier, Dethleu,	1695	470	Snellii, Willibrordi,	1621	48
Ericius, Nicholas,	1755	97	Sullamar, Henry,	1750	179
Finæus, Orontius,	1544	35	Thompson, T. Perronet,	1856	303
Grange, Armand,		316	Valentinus, Jacobus F.,	1589	36
Gregorio, P.,	1647	71	White, Richard,	1648	9
Gregory, James,	1668	71	Yvon, Paul,		179

*Augustus De Morgan's Cyclometers.*

Name.	Year.	Ratio.	Page.
Angherà, Domenico,	1854	3.2	289
Peters, William,	1848	3.2	255
Rossi, Gaetano,	1804	3.2	137
Baxter, Thomas,	1732	3.0625	87
Parsey, Arthur,	1832	3.0625	176
Lacomme, Joseph,	1836	3.125	32
Smith, James,	1859	3.125	216
Dean, William,	1863	3.140625	458
JOINER,	1863	3.140625	389
Beaulieu,	1676	3.1622776+	72
Bovillus, Charles,	1503	3.1622776+	31
De Beaulieu, Sieur,	1676	3.1622776+	71
Hobbes, Thomas,	1666	3.1622776+	66
Cataldi, Di Peter A., } {	1612	3.14159265358979323846+	46
Gruenberger, } {	1612	3.14159265358979323846+	
Antiphon,		3.1412+	288
Borello, Pellegrino,		3.142561983 <sup>57</sup> <sub>171</sub>	46
Bryson,		3.75	288
Campanus,	1503	3.142857 <sup>1</sup> <sub>7</sub>	31
De Fauré,	1747	3.160493827 <sup>11</sup> <sub>81</sub>	89
Dennison, Joseph,	1844	3.177777 <sup>7</sup> <sub>7</sub>	213
De Serres, Olivier,		3.162	288
Drach, Solomon,	1863	3.14159265+	460
Duchesne, Simon,	1558	3.14466+	35
FRIEND, (De Morgan's)		{ $3\frac{1}{8} + \frac{2}{80} \cos (A-a)$ ( $A$ , sun's long. ; $a$ , moon's long.) }	460
Hailes, John Davey,	1860	3.1424076+	339
Houlston, William,	1862	3.14213562373+	354
Johnson, Henry C.,	1843	3.048619 <sup>1</sup> <sub>21</sub>	215
Locke, Richard,	1730	3.18897+	87
Longomontanus,	1644	3.14185+	65
McCook,	1841	3.1201937+	214
Metius, Peter, }	1640	3.1416017699+	62
Metius, Adrain, }			
Phillips, Richard,	1793	3.461016+	145
Smith, Ambrose,	1855	3.1553+	170
Hindu, <i>Vīga Ganita</i> ,		3.1416+	
SPECULATOR,	1842	3.1416+	212
Ptolemy,	3.141552+	[Eng. Cyc. Art. "Quadrature."]	
Purbach,	3.141667+		



Marcelis, Jacob,  $3.\overline{1008449087377541679894282184894}$  77  
 $\overline{6997183637540819440035139278702}$   
 Van Ceulen, Lud., 3.141592653589793238462643383279502884+ 46

De Morgan was the author of the article on "Quadratures," in the Knight's "English Cyclopædia. He also mentions in his "Budget of Paradoxes," the works of Lipenius, Montucla, and Murhard, who have each written a work on the history of cyclometry.

He also mentions William Rutherford's extended calculations on the value of  $\pi$ , (p. 374). William Shanks is credited with carrying the value of  $\pi$  to 607 decimal places (p. 291). Since then Mr. Shanks has extended the decimal to 707 places.

De Morgan gives as an appendix to his "Budget," (pp. 495-500,) Lambert's method of demonstration that no two arithmetical numbers can express the ratio of diameter to circumference. This paper is also given in Brewster's translation of Legendre's Geometry.

There are many methods entirely independent of the circle, which produce the orthodox value of  $\pi$ . De Morgan gives the following series to infinity :

$$4(1 - \frac{1}{8} + \frac{1}{8} - \frac{1}{7} + \frac{1}{8} - \frac{1}{11} + \frac{1}{18} - \frac{1}{15} + \dots) = 3.14159265358979323846 +$$

The orthodox value of  $\pi$  is usually demonstrated by the method of exhaustions, that is, inscribed and circumscribed polygons. This process has been rigidly criticized by some learned mathematicians. The Legendre Method has been thoroughly examined by J. Ralston Skinner in "The Crown Jewels of the Nations and their Measures," 1877.

The work, "Sources of Measures," by J. Ralston Skinner, Cincinnati, Ohio, 1876, pp. 324, is based on John A. Parker's value of  $\pi$  ( $\frac{2061^2}{8581}$ ); also, the work "New Elements of Geometry," by Seba Smith, New York, 1850, pp. 200.

The arithmetical harmonies existing among the geometrical forms of triangles, squares, circles, polygons, solids, etc, were made the subject of a paper by the writer, entitled "Squares and Cubes," and read before the Scientific Chapter of the Athens Club of Manchester, N. H., February 12, 1877, especially discussing the "New Law in Geometry," as developed by Theodore Faber of Brooklyn, N. Y., and published in 1865. The paper will be revised and probably published in the near future, making a monograph of about 24 pages.

*Integral Proportions Proposed for the Value of  $\pi$ .*

Name.	Proportion.					A Value of $\pi$ .
Adorno, Juan N.,	7	: 22	: :	1	:	3.142857 $\frac{1}{7}$
Baddely, William,	361	: 1156	: :	1	:	3.202216 $\frac{24}{881}$
Baxter, Thomas,	16	: 49	: :	1	:	3.0625
Bennett, John,	26	: 84	: :	1	:	3.230769 $\frac{3}{18}$
Borello, Pelligrino,	484	: 1521	: :	1	:	3.142561983 $\frac{47}{121}$
Bryson,	4	: 15	: :	1	:	3.75
Cart, Francis G.,	1560	: 4889	: :	1	:	3.133974 $\frac{14}{89}$
Davis, John,	6	: 19	: :	1	:	3.16666666 $\frac{2}{3}$
Dean, William,	64	: 201	: :	1	:	3.140625
DeMedici, Charles,	289	: 908	: :	1	:	3.1418685 $\frac{35}{289}$
De Serres, Oliver,	500	: 1531	: :	1	:	3.162
Dennison, Joseph,	90	: 286	: :	1	:	3.17777777 $\frac{7}{8}$
Faber, Theodore,	81	: 256	: :	1	:	3.160498827 $\frac{13}{81}$
FUTURUS,	210	: 656	: :	1	:	3.123809 $\frac{1}{11}$
Goodsell, S. C.,	1	: $\sqrt{(\frac{800}{81})}$	: :	1	:	3.1426968+
Grosvenor, C. P.,	1	: $\sqrt{(200)}-11$	: :	1	:	3.1421356+
Hindu,	1250	: 3927	: :	1	:	3.1416
Hobbes, Thomas,	1	: $\sqrt{10}$	: :	1	:	3.162776+
Hornish, J. K.,	32	: 101	: :	1	:	3.15625
Johnson, Henry C.,	21	: 64	: :	1	:	3.048619 $\frac{1}{21}$
Leistner,	1225	: 3844	: :	1	:	3.13795919 $\frac{18}{49}$
Longomontanus,	43	: $\sqrt{(18252)}$	: :	1	:	3.14185+
May, John,	25	: 81	: :	1	:	3.24
McCook,	1	: $2+2[\sqrt{(128)}-11]$	: :	1	:	3.1201937+
Metius, Peter,	113	: 355	: :	1	:	3.14159292 $\frac{8}{113}$
Parker, John A.,	6561	: 20612	: :	1	:	3.1415942 $\frac{488}{6561}$
Phillips, Richard,	1	: $\sqrt{12}$	: :	1	:	3.461016+
Rossi, Gaetano,	5	: 16	: :	1	:	3.2
Smith, James,	8	: 25	: :	1	:	3.125
Young, Augustus,	1	: $\sqrt[3]{32}$	: :	1	:	3.1748020+
William Harbord makes the ratio to be a perfect square number, or						
	1	: 1.7724588509054 <sup>2</sup>	: :	1	:	$\pi$
Constant Terry makes the ratio to be a perfect square number, or						
	1	: 1.7763568394002504646778106689453125 <sup>2</sup>	: :	1	:	$\pi$

Theodore Faber makes his area, diameter, and circumference all to be perfect square numbers. His ratio is both a square and a biquadrate:  $1\frac{1}{8}$ , or  $(\frac{4}{8})^2 = \frac{16}{64}$ ; and  $1\frac{7}{8}$ , or  $(\frac{15}{8})^2 = \frac{225}{64}$ , or  $3.1604988267\frac{1}{8}$ , or

$$1 : (1.777777777\frac{7}{8})^2 :: 1 : \pi$$

$$\text{Diameter} = (1)^2. \quad \text{Circumference} = (\frac{15}{8})^2. \quad \text{Area} = (\frac{4}{8})^2.$$

$$\text{Circumscribed square} = (1)^2. \quad \text{Inscribed square} = (.5\frac{1}{4})^2 = \frac{1}{16}.$$

The recurring decimal of Mr. Faber's ratio contains the digits, excepting the digit 5; while his area contains them, excepting the 8.

Thomas P. Stowell has produced from the digits in the form of a common fraction a value of  $\pi$ , now generally in use, as follows:

$$\frac{87888}{21488} = 3.1416.$$

John Bounoulli says that the sum of the following series of fractions, which has unity for numerators and the squares of the natural numbers for denominators, is finite, and equal to the square of the circumference of the circle divided by 6; or the orthodox value of  $\pi$ :

$$1 + \frac{1}{4} + \frac{1}{9} + \frac{1}{16} + \frac{1}{25} + \frac{1}{36} + \frac{1}{49} + \frac{1}{64} + \frac{1}{81}, \&c. = \frac{3.14159265358979823 + \dots}{6}$$

Wallis, in his *Arithmetic of Infinites*, 1655, gives the following;

$$4 \times \frac{2.4.4.6.6.8.8.10.10.12.12, \&c.}{3.5.5.7.7.9.9.11.11.13.13, \&c.} = 3.141592653589794682384626 + \dots$$

The Integral Calculus gives the following simple expression in terms of a definite integral:

$$\frac{\pi}{2} = \int_0^{\infty} \frac{dx}{1+x^2} = 1.5707963267948976619281826691 + \dots$$

Prof. Benjamin Peirce, in his work, "Linear Associative Algebra," Washington, D. C., 1870, adopted a new symbol for the root of the imaginary quantity  $\sqrt{-1}$ , and produces a result which he terms "the mysterious formula," as follows:

$$\jmath = \sqrt{-1} \quad \epsilon = 2.7182818285 + \dots \quad \pi = 3.1415926535 + \dots$$

$$\jmath \jmath = \sqrt{\epsilon^\pi} = 4.810477381 + \dots$$

## The Solar Equation.

In astronomical works the Greek letter  $\pi$ , the initial of the word *parallax*, is also used to represent the solar equation:

$$\pi = 8''.86226925+$$

The parrallactic equation here given is called "the Latimer Solar Equation," from the late Charles Latimer, Cleveland, Ohio, who produces it from the orthodox value of  $\pi$  (the ratio), as follows:

$$\text{Parallactic } \pi = 5\sqrt{\text{Peripheric } \pi}.$$

$$8''.86226925+ = 5\sqrt{8.14159265358+}$$

This value, it will be observed, is ten times the side of a square equal to the area of a circle of diameter one:

$$8''.86226925+ = 10\sqrt{.785398163397448809+}$$

The different calculations of the sun's parallax in modern times as found in works on astronomy, are as follows;

1858	Leverrier,	.	.	8''.95	8''.85	8''.86+
1862	Foucault,	.	.	.	.	8''.86+
1862	Hall,	.	.	.	.	8''.84+
1863	Stone,	.	.	.	.	8''.94÷
1863	Hansen,	.	.	.	8''.97	8''.91+
1863	Winnecke,	.	.	.	.	8''.96+
1864	Powalky,	.	.	.	.	8''.86+
1867	Stone,	.	.	8''.91	8''.85	8''.916+
1867	Newcomb,	.	.	.	.	8''.848+
1868	Stone,	.	.	.	.	8''.91+
1868	Faye,	.	.	.	8''.70	8''.90+
1871	Powalky,	.	.	.	.	8''.7869+
1872	Leverrier,	.	.	.	.	8''.86+
1874	Cornu,	.	.	.	.	8''.794+
1875	Galle,	.	.	.	.	8''.873+
1875	Puiseux,	.	.	.	.	8''.879+
1877	Gill,	.	.	.	8''.765	8''.815+
1877	Airy,	.	.	.	.	8''.754+
1878	Stone,	.	.	.	8''.86	8''.979+
1878	Tupham,	.	.	.	8''.857	8''.754+

This table gives the results of 29 calculations. The sum of all is 257''.0109+, which divided by 29, gives a mean value for the "solar equation," 8''.862+; thus far it coincides with the Latimer value.

John Taylor, in "The Great Pyramid, Why was it Built?" 1859, says the Pyramid was built for a  $\pi$ -Pyramid. He finds its vertical height is to twice the breadth of its base as diameter to circumference,

$$486.2567 : 763.81 \times 2 : : 1 : 3.1415926535+$$

St. John V. Day, author of "Purpose and Primal Condition of the Great Pyramid of Jeezeh," 1868, computes the area of the Pyramid's right section to the area of the base as 1 to 3.14159265358979+, and adds that it is indeed most singular that the mathematical symbol  $\pi$  ( $\rho i$ ) for the ratio, is the first letter of the two Greek words *periph $\rho$ eia* and *pyramis*, and intimates that the symbol was probably derived from the latter word because that ratio enters into its several proportions.

Samuel Beswick, in his monograph on "The Sacred Cubit of the Great Pyramid and Solomon's Temple," 1878, says the builders took the circular measure, 3.14159265358979+, and called it a square, and took one side of this square for the first element in the scale of length.

$$\sqrt{3.1485926535897932+} = 1.77245385+ \text{ geometrical units.}$$

That the common cubit was ten times these units, or 17.7245385+ geometrical inches; that the royal cubit was 20.6786286+ geometrical inches; that the geometrical inch is = 1.00118+ British inches.

The varied length of some of the cubit-rods is best seen for comparison, as follows:

	Inches.	Feet.
Beswick, Pyramid cubit,	20.7080+	1.7275+
Elephantine,	20.625	1.71875
Harris, from Thebes,	20.650	1.72083 $\frac{1}{8}$
Jomard, in Turin Museum,	20.5786+	1.7148+
Jomard, another,	20.6584+	1.7215+
Memphis,	20.4729+	1.706+
Sir Isaac Newton,	20.628	1.719
Nileometer scale,	20.7484+	1.729+
Perring, from Pyramids,	20.6280+	1.7190+
Seyffarth,	20.6111+	1.7175+
Wilkinson, in Turin Museum,	20.5780+	1.7144+

Mr. Beswick says the above approximations of the cubit-rods show they were all intended to represent the same measure, and that their makers had but one standard for a guide.

An interesting illustrated paper on Solomon's Temple by Mr. Beswick will be found in *Scribner's Monthly*, December, 1875, pp. 257-272.











AUG 14 1888

## MISCELLANEOUS

## NOTES AND QUERIES,

WITH ANSWERS.

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*"All things are double, one against another."*—JESUS, IN ECCL. XLII, 24.

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*Some Atmospheric Phenomena.*

BY PROF. N. B. WEBSTER, Vineland, N. J.

Aristotle attempted to weigh air by weighing a bag when empty, and again when inflated, and because there was no difference in weight under the two conditions he supposed that air had no weight. It is now a frequent school-room experiment to show that a glass or metal flask of ten cubic inches capacity weighs fully three grains more when filled with air than when the air has been drawn from it with an air-pump. The weight of the whole terrestrial atmosphere is about that of a solid copper globe sixty-two miles in diameter.

The air in a room 60 feet long, 30 feet wide, and 15 feet high, weighs one ton, or two pounds to the cubic yard.

The weight of the atmosphere must be limited to where gravity will overcome the centrifugal force, and the repulsive force of the ærial molecules. Biot proved that the minimum height of the air must exceed 30 miles, and the maximum height must be less than 21,000 miles. If the air was of equal density throughout, its height would be 27,818 feet, or about 1,200 feet below the summit of Mount Everest in Asia. From this height a falling body would attain a velocity of 1,338 feet a second, which is the velocity with which air rushes into a void space. For this reason a cannon ball fired with greater initial velocity than 1,338 feet a second will leave a vacuum behind it till it is rapidly reduced to a less velocity.

One effect of the atmosphere is to lengthen the day by causing eve-

ning and morning twilight. If its height was unlimited the two twilights would blend at midnight, and we should have practically no night.

Without the atmosphere stars would be visible in the day-time from the earth, as they must be from the airless moon.

The atmosphere is indispensable to all ordinary sounds. In condensed air sounds are very loud, and in rarefied air sounds are very feeble. It is true that men, miles above the earth in balloons, hear noises made at the surface with great distinctness, but persons at the surface cannot hear any sounds from such high balloons. The loudness of sounds depends on the density of the air where they originate, and not where they are heard.

There is one reason why people "hard of hearing" can sometimes hear a sermon, or a play from a gallery, better than in the auditorium below. A few years ago the lower plane in the theaters was, too often, appropriately named the "pit." In the upper part of the room the air is usually lighter than below, and the velocity of sound waves is greater in lighter gases. Hence, sounds are a means of detecting the accumulation of fire-damp in mines, in time to take precaution to prevent explosions in mines. Loudness must not be confounded with velocity. Heavy liquids, unlike heavy gases, transmit sounds faster than those less dense.

Tyndall says that a gun fired from Chamouni is audible on the summit of Mount Blanc, but a gun fired on Mount Blanc cannot be heard at Chamouni.

Experiments have shown that a person speaking in the open air can be heard about equally well at a distance of 100 feet in front, 75 feet on each side, and 30 feet behind.

Cannon discharge can be heard further than thunder. Thus Campbell wrote truly, as well as poetically, in his "Battle of Hohenlinden,"

" And louder than the bolts of heaven  
Far flashed the red artillery."

If an elephant were as altisonant, or far-sounding, as a nightingale in proportion to his bulk, his trumpeting could be heard around the world. On like conditions an ox lowing in Australia would be heard in New York about 15 hours after the Australians heard him.

In laying the foundations of the piers of St. Louis bridge over the Mississippi, by means of diving bells, so deep that the pressure was four atmospheres or 60 pounds to the inch, the ticking of a watch was painfully loud, but the occupant found it impossible to whistle.

It has been a question whether 1,000 men shouting at once could be heard farther than the loudest man among them; whether the good and earnest Wesley, who wished "for a thousand tongues to sing," could have been heard farther with them than with his monoglossol limitation. It is pretty certain that 1,000 boys together can-

not throw snowballs farther than the strongest, or longest-armed one, among them.

A trumpet sounding in the midst of a crowd of shouting men might not be heard near by, but might be heard beyond the sound limit for the men.

At the height of six and a half miles, Glaisher found the temperature to be twelve degrees below zero Fahrenheit.

The highest inhabited spot on the globe is the Buddhist cloister of Halne of Thibet, where at an elevation 16,500 feet, the good monks, having more than half the atmosphere below them, breathe air attenuated more than one-half of what the normal breath requires.

Cats die at an elevation of 13,000 feet, even if they do have "nine lives" at the surface, but dogs can follow their masters to the greatest accessible elevations. Birds and insects are better adapted to breathe

"The difficult air of the iced-mountain top."

Dr. Arnott says the pressure of the air on the knee-joint is from 60 to 100 pounds, and is sufficient to hold it in place without ligaments. No wonder the joints are so sensitive to barometric changes. A man weighs less when the barometer is high, although the atmospheric pressure on him is more than when the barometer is low. As the pressure of air on an ordinary-sized man is about 15 tons, the rise of the mercury of the barometer from 29 to 31 inches adds about one ton to the load he has to carry. Fortunately the elasticity of the air in cells and cavities within him, corresponds to the pressure, so that a man in health is unconscious of his increased burden.

Were it not for the atmosphere there would be on the earth no whisky, or milk, or even water to dilute either, for the chemical compound known as water when liquid, ice when solid, and steam when gaseous, would not appear in its liquid state unless some chemist should bring it about by experiment as he liquefies carbonic acid.

In the receiver, as the glass bell is called which does not receive, with a vacuum of  $\frac{1}{800}$  of the ordinary atmosphere, the boiling point would be as low as the freezing point. In melting, ice would flash into steam without the intermediate condition called water, as metallic arsenic jumps at once to an invisible gas without assuming a liquid state, when not under pressure.

If the moon has no atmosphere, it, *ex officio*, has no water, even if poets do call it the "watery moon." The "Man in the Moon" can neither smoke as earth-men smoke, nor drink tea, coffee, whisky, water, nor kerosene, unless above the 212 degree test.

The French gunners in Mexico, in 1864, found that formulæ for elevations of cannon for different ranges did not apply on the tableland of 6,000 feet elevation. They had been made for the denser atmosphere of the ocean level.

If a dry well could be dug 46 miles deep, the density of the air at

the bottom would be as great as quicksilver, according to the law of Marriotte. By the same law, a cubic inch of air taken from the surface of the earth to a height of the earth's radius, about 4,000 miles, would expand sufficiently to fill a sphere of the diameter of Saturn's orbit which is nearly 2,000,000,000 miles. Such air would be "too thin" for our use.

It is said that Leadville whiskey "gets in the head" quicker after it gets into the mouth at Leadville than elsewhere. Very likely, for the people up nearly two miles above the sea-level are pretty high when they drink the whisky which evaporates rapidly or "flies to the head" and "steals away their brains" quicker than it would near the salt water. At Leadville water boils at about 160 degrees, which makes it difficult to cook potatoes or beans by boiling. Saussure found he could not boil potatoes "done" on the top of Mount Blanc, nearly a mile higher than Leadville where water boiled at 180 degrees Fahrenheit. Taking advantage of the fact that the temperature of boiling water cannot (unless under pressure) be increased by increasing the fire under it, and that it varies with the pressure on it, and also of the fact that atmospheric pressure diminishes as the height above earth's surface increases, explorers have measured the height of mountains by boiling and a thermometer. Instruments have been made to show the difference between a floor and a writing-table in altitude. In this way Lieut. Herndon, U. S. Navy, brother-in-law of Admiral Maury and father-in-law of President Arthur, measured his altitude across the Andes.—*Illustrated Christian Weekly*.

**BLIZZARD.** The word *blizzard* is claimed to have been first used by those who first experienced it while settling the western plains. It is said to have found its way into print in the *Northern Vindicator*, of Estherville, Iowa, and the editor attributed it to a local George Francis Train, currently known as "Lightning Ellis," because of his amazing slowness. This anecdotal theory having been printed in *The Times*, the word came eastward into wider publicity. A correspondent of the latter paper says his best recollection is that the word originated in Wisconsin, in 1848.

**SPELLING REFORM IN CONGRESS.** The Lth Congress has considered Mr. Voorhees's bill on "an amended orthography," which provides for a simplification of spelling. The bill provides that it shall take effect upon all the schools of the Territories and those of the District of Columbia, and upon the military and naval academies and the Indian and colored schools in the Territories. The following twelve groups comprise the changes :

First—The silent e shall be dropped when phonetically useless, as in are, granite, eaten, rained, harken, and so forth. Write er for re, as in theater, meter, saber, and so forth.

Second—Drop a from ea, having the sound of e, as in feather, leather, and so forth.

Third—Drop o from eo, having the sound of e, as in jeopardy, leopard, and so forth.

Foruth—For o having the sound of u, write u in above (abuv), dozen, (duzen), some (sum), tongue (tung), and the like.

Fifth—Drop o from ou, having the sound of u, as in journal, nourish, rough (ruf), trouble, tough (tuf), and the like.

Sixth—Drop silent u after g, before a and in native English words; drop final ue, as in guarantee, guard, guess, guest, guilt, and so forth; apologue, catalogue, and so forth; demagogue, pedagogue, and so forth; league, harangue, tongue (tung), and so forth.

Seventh—Double constants shall be simplified.

Final b, d, g, n, r, t, f, l, z, as in ebb, add, egg, inn, purr, butt, baliff, dull, buzz, and so forth.

Medial before another consonant, as battle, ripple, written (writn), and so forth.

Initial unaccented prefixes, and other unaccented syllables as in abbreviate, accuse, affair, and so forth; curvetting, traveller, and so forth.

Eighth—Change d and ed, final, to t when so pronounced, as in crossed (crost), looked (lookt), and so forth, unless the e affects the preceding sound, as in chafed, chanced.

Ninth—Change gh and ph to f when so pronounced, as in cough, philosophy, and so forth.

Tenth—Change s to z in distinctive words, as in abuse, house, verse; rise, and so forth.

Eleventh—Drop t in catch, witch, and so forth.

Twelfth—Change the spelling in the following words: Ake (ache), anker (anchor), beuty (beauty), coud (could), hole (whole), parlament (parliament), receit (receipt), rime (rhyme), sent (scent), sithe (scythe), wimen (women), yoman (yeoman); drop silent b in bomb, crumb, debt, doubt, dumb, lamb, limb, numb, plumb, subtile, succumb, thumb; change c back to s in cinder, expence, fierce, hence, once, pence, scarce, since, source, thence, tierce, whence; drop the h of ch in chamomile, choler, cholera, melancholy, school, stomach; drop h in feign, foreign, sovereign, aghast, burgh, ghost; drop gh in haughty; though (tho), through (thru); drop s in aisle, demesne, island.

*Provided*, That the foregoing rules shall not apply to proper names.

*And provided further*, That where ambiguity would result from the use of the said rules the old form may be retained.

The bill was referred to the Committee on Education.

### *Mesmer's Code for Animal Magnetism.*

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A correspondent desires Mesmer's doctrines, or claims, for animal magnetism. These are best given by the discoverer himself, in what is called "Mesmer's Twenty-Seven Aphorisms."

1. There exists a reciprocal influence between the heavenly bodies, the earth, and all living beings.

2. A fluid which is everywhere, and which is so expanded that it admits of no vacuum, of a delicacy which can be compared to nothing beside itself, and which, through its nature, is enabled to receive movement, to spread and to participate in it, is the medium of this movement.

3. This reciprocal activity is subject to the operation of mechanical laws, which until now, were quite unknown.

4. From this activity spring alternating operations, which may be compared to ebb and flow.

5. This ebb and flow is more or less general, more or less complex, according to the nature of the origin which has called them forth.

6. Through this active principle, which is far more universal than any other in nature, originates a relative activity between the heavenly bodies, the earth, and its component parts.

7. It immediately sets in movement — since it directly enters into the substance of the nerves — the properties of matter and of organized bodies, and the alternate operations of these active existences.

8. In human bodies are discovered properties which correspond with those of the magnet. Also, various opposite poles may be distinguished, which can be imparted, changed, disturbed, distributed, and strengthened.

9. The property of the animal body, which renders it susceptible to the influence of the heavenly bodies, and to the reciprocal operation of those bodies which surround it, verified by the magnet, has induced me to term this property Animal Magnetism.

10. The power and operation thus designated as Animal Magnetism can be communicated to animate and inanimate bodies ; both, however, are more or less susceptible.

11. This power and operation can be increased and propagated through the instrumentality of these bodies.

12. Through experience it is observed that an efflux of matter occurs, the volatility of which enables it to penetrate all bodies without perceptibly losing any of its activity.

13. Its operation extends into the distance without the assistance of an intermediate body.

14. It can be increased and thrown back again by means of a mirror, as well as by light.

15. It can be communicated, increased, and spread by means of sound.

16. This magnetic power can be accumulated, increased, and spread.

17. I have observed that animated bodies are not equally fitted to receive this magnetic power. There are also bodies, although comparatively few, which possess such opposite qualities that their presence destroys the operation of this magnetism in other bodies.

18. This opposing power permeates equally all bodies. It can also in the same manner be communicated, accumulated, and propagated; it streams back from the surface of mirrors, and can be spread by means of sound. This is not alone occasioned by a deprivation of power, but is caused by an opposing and positive power.

19. The natural and artificial magnet is equally, with other bodies, susceptible to animal magnetism, without, in either case, its operation upon iron or upon the needle suffering the slightest change.

20. This system will place in a clearer light the nature of fire, and of light, as well as the doctrine of attraction, of ebb and flow, of the magnet, and of electricity.

21. It will demonstrate that the magnet and artificial electricity, with regard to sicknesses, possess simple qualities possessed in common with other active forces afforded by nature; and that if any useful operation springs from their instrumentality, we have to thank animal magnetism for it.

22. From instances deduced from my firmly established and thoroughly proved rules, it will be easily perceived that this principle can immediately cure diseases of the nerves.

23. Through its assistance the physician receives much light regarding the application of medicaments, whereby he can improve their operation, call forth more beneficial crises, and conduct them in such wise as to be master of them.

24. Through this knowledge the physician will be enabled to judge of the origin, the progress, and the nature even of the most intricate diseases. He will be enabled to prevent the increase of disease, and bring about a cure without exposing his patient to dangerous effects or painful consequences, whatever be the age, sex, or temperament of the patient.

26. Women, during pregnancy, and in childbirth, receive advantage therefrom.

27. The doctrine, will at length, place the physician in such a position that he will be able to judge the degree of health possessed by any man, and be able to protect him from any disease to which he may be exposed. The art of healing will by this means attain to its greatest height of perfection.



## QUESTIONS AND ANSWERS.

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¶ THE SOUTHCOTTERS. Who were the Southcoters, and who gave the name to them? •  
A SEEKER.

Buck's "Theological Dictionary" gives an account of the Southcoters. They are well known in the south of England, and received their name from Joanna Southcott (1750?-1814). Her prophecies were published in London, 1804. She claimed to have foretold the death of Bishop Butler, and appealed to a letter she put into the hands of a clergyman whom she named. She heard a noise one night as if a ball of iron rolled down three steps, and this she declared to mean the *sword*, *plague*, and *famine* which were soon to come. She affirmed that the extraordinary harvests of 1797 and 1800, and the war later, were foretold by herself. She says in November, 1803, she was ordered to open her Bible, which she did at Ecclesiastes 1, 9 :

"The thing that hath been, it is *that* which shall be ; and that which is done, is that which shall be done ; and *there is* no new *thing* under the sun."

This was the text that had much to do with her doctrine and views.

Her mission began in 1792. Her last production was dated March 10, 1814. This declaration she made in reference to herself. She says :

"I here give notice, not to receive any person who may come in the name of Joanna Southcott, unless they can prove, that they stand on the will of the late James Cousins, and can produce the probate of his will ; (he died Nov. 17, 1812). I am, likewise, ordered to print the register of my age—'Joanna, daughter of William and Hannah Southcott, baptised the 6th day of June, 1750, as appears by the registry of baptism of Ottery, St. Mary's Parish, Devon. I was born in April, but do not know the day of the month. I was inclined to have my likeness taken in order to expose any misrepresentations when I shall be no more. I was answered — 'It was the will of the Lord that it should be done !' Mr. Sharp took my likeness and engraved it. In it I had the Bible placed before me, as opened by me promiscuously at the last two chapters of Isaiah."

Joanna died Dec. 27, 1814. It was given out that she was to be the mother of a *Second Shiloh*, as Mary had been the mother of Jesus, who was claimed to be the *First Shiloh* (Genesis XLIX, 10). On a stone over her grave is this inscription :

" While through all thy wondrous days  
Heaven and earth enraptured gaze,  
While vain sages think they know  
Secrets thou alone canst show;  
Time alone will tell what hour  
Thou'lt appear in greater power."

Her proclamation was displayed " Four Hundred and Fifty Thousand." Just how numerous her followers were, we do not know. We have received, through the courtesy of J. W. Hackwood, Wednesbury, England, a copy of one of the organs of the Southcoters, and the Proclamation, for which we return our thanks. They are entitled as follows :

"The Morning Star : the Herald of the Coming Kingdom." No. 1. London, December 1, 1864.

" Truth crushed to earth shall rise again,  
The eternal years of God are hers;  
But error, wounded, writhes with pain,  
And dies amid his worshippers."

The " Proclamation, given June 3d, 1864, to the believers in the divine mission of Joanna Southcott." " Obedience is better than sacrifice." " And as the Lord is about to pour out His Spirit upon them and fulfill all those beautiful prayers that have so long been offered up to Him to destroy the works of the Devil that is come down in great wrath, because he knoweth his time is short." " The King's business requires haste."

THE MEANING OF " PISCATAQUOG." (Vol. IV, p. 96.) The word *Piscataquog*, according to the *Farmers' Monthly Visitor*, Vol. XII, p. 47, edited by Chandler E. Potter, Manchester, N. H., 1852, is a compound Indian word from *Pos* (great), *Attuck* (deer), and *Auke* (place), and meaning " The Great Deer Place "; and true to its Indian name it afforded a great supply of venison, long after the English had settled on the Merrimack; Halestown, now Weare, upon its North branch, being as celebrated for hunting grounds as Amoskeag was for a fishing place.

THE MEANING OF NEW " HAMPSHIRE." Capt. John Mason was an English naval officer, and in 1629 obtained a grant of land from the Merrimack to the Piscataqua, and sixty miles into the country, which he called " New Hampshire," he having come from the county of *Hants*, in England, known as Hampshire, a corruption of *Hantsshire*, shire meaning county. Capt. Mason died in 1635 without realizing any benefit from his grant, leaving his landed estate to his grandson, Robert Tufton, upon conditions he should take the name of Mason.

New Hampshire has no motto, but her great seal bears the words, *Sigillum Neo Hantoniensis Reipublicæ*. We refer our correspondent "M. G. S." to the *Farmers' Monthly Visitor*, Vols. XII and XIII ; the "Provincial Papers of N. H.," Vols. I to XVI, for details of the seal.

EDITIONS OF EUCLID'S ELEMENTS OF GEOMETRY. (Vol. V, p. 96.)  
It is next to impossible to tell how many translations or edition, have been published. We give those in our collection :

Barrow, Isaac. Euclide's Elements, Books, I–XV ; with Archimedes' Theorems ; and Data by Thomas Haseldon. London, 1732.

Another edition, London, 1751.

Benson, Lawrence S. Elements, excluding the *Reductio Ad Absurdum* reasoning. New York, 1868.

Byrne, Oliver. Doctrine of Proportion, Book V, simplified and clearly developed. London, 1841.

Byrne, Oliver. Elements, Books I–VI, by colored diagrams and symbols. London, 1847.

Cresswell, D. Supplement to Elements, Books I–VI. London, 1816.

Elrington, Thomas. Elements, Books I–VI. 10th edition. Theory of Proportion, Book V, altered. Dublin, 1833.

Fenn, Joseph. Elements, Books I–VI, XI–XII. Bordered diagrams. Dublin, 1769.

Gunn, Samuel. Elements from the Latin translation of Comman-dine ; Books I–VI, XI–XII ; faults of Harris, Caswell, Heynes, and others corrected. 8th edition. London, 1759.

Holyoake, G. J. Beauties and Uses of Euclid. London, 2d edition.

Newton, Isaac. Appendix to the Elements with new propositions and data. Wisbech, 1825.

Phillips, George. Elements, Books I–VI ; translated from Peyrard's edition. London, 1826.

Playfair, John. Elements, Books I–VI, XI–XII ; with supplement on the quadrature of the circle ; solids. New York, 1854.

Roche, Martin. Elements, Books I–VI ; Simpson's and Playfair's corrected. Philadelphia, 1829.

Simson, Robert. Books I–VI, XI–XII ; with Data. Theon's errors and others corrected. Philadelphia, 1829.

Thompson, James. Elements, Books I–VI, XI–XII. 3d edition. London, 1845.

Whewell, William. Mechanical Euclid, with mathematical reasoning and logical deduction. Cambridge and London, 1837.

Whiston, William. Elements, Books I–IV, XI–XII ; with Archime-des' Theorems, by Andrew Tacquet. 3d edition, London, 1727.

Tenth edition, with practical corollaries. Dublin, 1775.

**MNEMONICAL SECRETS.** (Vol. V, p. 96.) Some prodigies have wonderful memories, while others have a key to guide their memories; especially is this true where long decimals are repeated. There is a mathematical law that governs many decimals, especially repetends. The repetends of certain primes are limited to one less than the particular prime. For instance, the prime 7 gives for a repetend six decimals, .142857. The last half of the decimals being complements of 9's of the first half; thus when the first half of the repetend is obtained the last half is immediately written down. So of many primes.

Timothy Clowes, LL.D., of New York, forty years ago used to surprise his audiences by repeating the repetend-decimal of 337. He committed the first 168 to memory and immediately followed them by their difference from nines.

No. (1) is the first 168 decimals and No. (2) the last 168 decimals:  
 (1) 00296735905044510385756676557863501483679525222551928783-  
 (2) .99703264094955489614243323442136498516320474777448071216-  
 (1) 38278931750741839762611275964391691394658753709198813056-  
 (2) 61721068249258160237388724035608308605341246290801186943-  
 (1) 37082195845697329376854599406528189910979228486646884272.  
 (2) 62917804154302670623145400593471810089020771513353115727.

Another mnemotechnist will repeat the decimal of 487. This repetend-decimal is easily written down after obtaining the first 45 decimals. Then *divide* this decimal by 2, beginning with the second figure, continuing to the 441st place:

$\frac{1}{487} = .00205\ 33880\ 90349\ 07597\ 53593\ 42915\ 81108\ 82956\ 87885$   
 0102 66940 45174 53798 76796 71457 90554 41478 43942  
 5051 33470 22587 26899 38398 35728 95277 20739 21971  
 2525 66735 11293 63449 69199 17864 47638 60369 60985  
 6262 83367 55646 81724 84599 58932 23819 30184 80492  
 8131 41683 77823 40862 42299 79466 11909 65092 40246  
 4065 70841 88911 70431 21149 89733 05954 82546 20123  
 2032 85420 94455 85215 60574 94866 52977 41273 10061  
 6016 42710 47227 92607 80287 47433 26488 70636 55030  
 8008 21355 23613 96303 90143 73716 63244 35318 27515  
 4004 10677 61806 98151 95071 86858 31622 17659 13757  
 7

This decimal, it will be readily observed, obtained after the first 45

decimals (the first line), by halving it and each subsequent line.

The peculiar properties of this number 487 were first noticed by Desmarest who divided the periods of each number up to 1000 and tabulated them. He found that the numbers 3 and 487 were the only two below 1,000 that produced a repetend that would divide their own divisor without a remainder. All the numbers below 1,000 that limit their repetend-decimal to one less than the number itself are *fifty-four* as follows -

7	59	147	229	337	491	577	709	863
17	61	167	233	367	499	593	727	887
19	97	179	257	379	503	619	743	941
23	109	181	263	383	509	647	811	953
29	113	193	269	389	541	659	821	977
47	131	223	313	433	571	701	857	983

Some one of these repetend decimals are usually selected the result of which fall under a mathematical law.

Francis Fauvel-Gouraud, a phreno-mnemotechnist, used to surprise his auditors forty years ago, by repeating the usually accepted value of  $\pi$  (ratio of circumference to diameter), to 155 decimals, which is that of the Radcliffe manuscript in the Oxford library. Even if he committed this to memory, he had 13 less figures to remember than Timothy Clowes before mentioned. Our correspondent, "F. K. Goldsmith," can find much information on mnemonics by consulting the "Phreno - Mnemotechnic Dictionary," by Francis Fauvel-Gouraud, New York, 1844.

"THE UNPUNCTUATING DODSON." (Vol. V, p. 96.) This person was the Rev. J. Dobson, a fellow of St. John's College, Cambridge, England, who was rector of Brandesburton in Yorkshire, and died in 1847. He was also called "Death Dobson" on account of his head and aspect of countenance being not very unlike the ordinary pictures of human skulls. He published five tracts in which are no punctuation, except a period at the end of the paragraphs. No captials were used excepting at the beginning of paragraphs. Not a single proper name is in them. He published the "Elements of Geometry" in two quarto volumes, in 1814, which were treated the same way, excepting when a comma was wanted between letters representing straight lines as AB, BC.

## *The Secret Symbols of the Rosicrucians.*

Considerable attention has been paid of late to the study of the Eastern Religions, and but comparatively few people have attempted to penetrate behind the veil which hides the sanctuary of the Christian religion. Such attempts were, however, made during the Middle Ages by the *Hermetic Philosophers* called the *Brotherhood of the Golden and Rosy Cross*, and they laid down the results of their investigations in certain Symbols, which were called "secret," because they can be understood only by those who possess the key to their understanding. This Key, which alone opens the door, is *Spirituality*, that is to say, *Reason*, unadulterated by sophistry, free from dogmatic and sectarian prejudices, free from scepticism and superstition.

Among the great majority of the followers of the Christian church this key has been lost, and sophistry has taken the place of understanding. There is, perhaps, not one in a thousand of laymen or priests who knows the true meaning of the symbols and ceremonies of the Christian church. What the modern Christian usually knows about Christianity is merely its *historical*, but not its *spiritual*, character. The *Bible* has been degraded into a mere history of the Jews, the universal glorious *Christ-Spirit*, the Light of the World, the divine element in Man, which lives to-day as it ever lived since the beginning of the world, has in the minds of his worshippers dwindled down to a mortal man, who lived among the Jews and was executed as a criminal.

Ever since the days of the great Reformation, when the *Bible* became the common property of the people who were unable to understand the secret meanings of its fables and allegories, which were known only to the initiated, the Cabalists, Alchemists, and *Rosicrucians*, the Christian religion has been studied more in its intellectual than in its spiritual aspect. Its external forms have passed through a severe scrutiny by those who could see in them nothing but the external forms, and their internal spirit was lost. The authorities of the church, being themselves unable or unwilling to explain their secret meaning, insisted that the fables and allegories of the *Bible* should be accepted in their literal sense, however absurd and unintelligible the latter may be. The intellect of the educated classes revolted at such an attempt to put their reason in bondage, and the consequence was that the spiritual power of the church has been lost in proportion as the latter lost sight of the eternal truth. From a religion of divine wisdom, teaching a true religion which man bears to the eternal source from which he emanated, and which it is destiny to return, modern Christianity has become almost a system of forms and ceremonies with little or no spirituality, a means to afford a comfortable living to the priesthood, a method of deceiving the ignorant and gullible with false hopes, and of restraining the wicked by fear, while the Christian places of worship have become more than ever deserted, except such as use them as places for religious amusement or for the display of fashion, and there are now very few who bring with them the living Christ, when they visit the church. Sentiment has taken the place of spiritual power, superstition and scepticism the place of the life-giving faith, and even the meaning of the terms signifying divine virtues have become unknown among the learned. The attacks of the materialist, sceptic, and arguer about the forms of Christianity are allowed to go on without any defence being made, and if such a defence is ever attempted, matters are usually rendered still worse for the church, on account of the inefficacy and unreasonableness of the argument of its defenders. Under such circumstances it must be thrice welcome to every lover of Truth, whether he be a Christian, or minister, or layman, or an infidel, as it will be to every Occultist, Theosophist, and Mason, to see the truths of religion revealed by the work called "*The Secret Symbols of the Rosicrucians.*" For three centuries these symbols have been hidden away, nor would it have been of much use to publish sooner, as they would not have been understood. Now, however, as the Light, which rose from the East, originating in the recent revival of the study of the Eastern books, has begun to radiate over the West, we may study and understand these symbols in that Light. We may thus perhaps redeem Christianity from her present state of degradation and decay, and restore to her the living spirit of Christ. To facilitate the study of these symbols, a Vocabulary has been added to the book, giving correct definitions and explanations of the occult terms used in the work. (See advertisement on the cover).

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WAR OF 1812-'14. Can any of the many readers of NOTES AND QUERIES give the author's name, and general points and particulars of a pamphlet of which the following is a copy of the title-page :

"A short and thrilling narrative of a few of the Scenes and Incidents that occurred in the Sanguinary and Cruel War of 1812-'14, between England and the United States; written by one who in defence of his country's Rights, has faced the cannon's mouth and who passed through or was an eye-witness to every scene and incident here related. Published by the Author. Advertiser Press, Norway, (Maine). 1853."

M. O. WAGGONER. Toledo, O.

*The Decimals of 81.*

(1)	Omits 8.	.012345679	1	Sum.	(4)	Omits 1.	.987654320	80	Sum.
		.123456790	10				.876543209	71	
		.234567901	19				.765432098	62	
		.345679012	28				.654320987	53	
		.456790123	37				.543209876	44	
		.567901234	46				.432098765	35	
		.679012345	55				.320987654	26	
		.790123456	64				.209876543	17	
(2)	Omits 7.	.901234567	73	Sum.	(5)	Omits 2.	.098765432	8	Sum.
		.580246913	47				.419753086	34	
		.802469135	65				.197530864	16	
		.024691358	2				.975308641	79	
		.246913580	20				.753086419	61	
		.469135802	38				.530864197	43	
		.691358024	56				.308641975	25	
		.913580246	74				.086419753	7	
(3)	Omits 5.	.135802469	11	Sum.	(6)	Omits 4.	.864197530	70	Sum.
		.358024691	29				.641975308	52	
		.716049382	58				.283950617	23	
		.160493827	13				.839506172	68	
		.604938271	49				.395061728	32	
		.049382716	4				.950617283	77	
		.493827160	40				.506172839	41	
		.938271604	76				.061728395	5	
(7)		.382716049	31	Sum.	(10)		.617283950	50	Sum.
		.827160493	67				.172839506	14	
		.271604938	22				.728395061	59	
		.037037037	3				.962962962	78	
		.370370370	30				.629629629	51	
		.703703703	57				.296296296	24	
		.740740740	60				.259259259	21	
		.407407407	33				.592592592	48	
(8)		.074074074	6	Sum.	(11)		.925925925	75	Sum.
		.148148148	12				.851851851	69	
		.481481481	39				.518518518	42	
		.814814814	66				.185185185	15	
(9)				Sum.	(12)				Sum.
		.111111111	9				.888888888	72	
		.222222222	18				.777777777	63	
		.333333333	27				.666666666	54	
(10)		.444444444	36	Sum.	(13)		.555555555	45	Sum.



The foregoing table is constructed on the peculiar property of the number 9.

1. The square of 9 is reduced to all its repetend decimals from 1 to 80. The numerators are placed on the right.

2. Table (13) the numerators are the multiples of 9, and hence the decimals are produced in regular order.

3. Table (1) produces the digits in regular order omitting the 8, each numerator increasing by 9 while each repetend begins with 1 more.

4. Table (2) produces the digits in irregular order omitting the 7, each numerator increasing by 18; and similarly with (3), (4), (5), (6).

5. Tables (7), (8), (9), (10), (11), (12), produce by threes, while the numerators increase by 27.

6. The sum of the repetend in each table is always the middle numerator of that table.

7. If tables (1), (2), (3), (7), (8), and (9), be placed exactly upon tables (4), (5), (6), (10), (11), and (12), each sum will be 9; while the sum of the numerators will be 81.

**PROVERBS ABOUT WIND.** Cats with their tails up and hair apparently electrified indicate approaching wind.

If swine be restless and grunt loudly, there will be much wind.

Pigs can see the wind.

Hunters say that the direction in which the moon flies in the morning will be the direction of the wind the next day.

Magpies flying three or four together, and uttering harsh cries, predict windy weather.

Anvil-shaped clouds are very likely to be followed by a gale of wind.

The vernal equinoctial gales are stronger than the autumnal.

If it blows during the day it usually hushes toward evening.

If small white clouds are seen to collect together, their edges appearing rough, expect wind.

A light yellow sky at sunset presages wind.

If the full moon rises red expect wind.

A very red sky in the east at sunset indicates stormy wind.

Heavy, white, rolling clouds in front of a storm denote high wind.

Always a calm before a storm.

A gale moderating at sunset will increase before midnight, but if it moderates after midnight, the weather will improve.

Wind storms usually subside about sunset, but if they do not the storms generally continue during the following day.

No weather is ill,  
If the wind is still.  
The sharper the blast,  
The sooner 'tis past.

When the glass is low,  
Look out for a blow,  
Fast rise after a low, (barometer),  
Precedes a stormy blow.

Wind in the west, weather is best;  
Wind in the east, good for neither man nor beast.

H. W. H.



## QUESTIONS.

1. What was the so-called "Triangle Controversy" ? JACOB.
2. Who were the *Dodekaphylon* ? JACOB.
3. What is known of the great floods of Greece, such as *Ogyges'*, and *Dukalion's* flood ? A. W.
4. Will some one please give the English of "*Il faut que j'y songe encore*," as found on page 103, last number of NOTES AND QUERIES. ENGLISHMAN.
5. What are the Movable Feasts and Holy Days, and the Immovable Feasts and Holy Days ? DANIEL DIPPER.
6. Who first discovered and demonstrated the musical scale or octave ? GEO. J. WHITE.
7. Give a brief description of the Zodiac of Denderah. J. P. SHIELDS.
8. Is there trustworthy historical facts or philological evidence that that the ancient city of Thebes in Egypt derived its name *Thebes* from the same root-word that *Thibet* was derived from ? J. P. SHIELDS.
9. Swedenborg says that "*The Ancient Word*, which was in Asia before the Israelitish Word, is still preserved there among the people who dwell in Great Tartary." To what Word does he refer ? J. P. SHIELDS.
10. What is the theory of the "Polarization of Light" ? ENO.
11. How many constellations called "The Dipper" are there, what stars compose them, and where located ? JAMES HUNTER.
11. What is the Ygdrasil, and where is it found ? X. Y. Z.
12. What is the "Feast of Asses," and when celebrated ? H.
13. Who were "The Twelve Disciples," mentioned in Acts xix, 2-7, who "had not so much as heard whether there be any Holy Ghost," and who were first baptized by John, and second by Paul ?
14. Why do the Liberals reverse our adopted Roman numerals, I V X L C D M, and make the date MDCLXVI (1666) to be the E. M. (Era of Materialism) ? ANDREW.
15. Why are the divisions of counties in some of the States called *Hundreds* ? SCHOOL BOY.
16. What are "Fescennine Verses" ? SARAH E. BURNS.
17. Why are troops called *Dragoons* ? HAMILTON.
18. Why are persons who guide travelers and point out objects of interest called *Cicerones* ? PALEY D. OSGOOD.
19. Give the derivation of the measures, *palm*, *foot*, *cubit*, *rod*, *chain*, *fathom*, *gnot*, *league* ? JONATHAN.









MISCELLANEOUS

NOTES AND QUERIES,

WITH ANSWERS.

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*"Geometrical equality can do great things, among gods and men."*—PLATO.

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VOL. V.

SEPTEMBER, 1888.

No. 9.

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WHAT IS THE HINDU COSMOGONY? Our correspondent "JOEL HENDERSON," asks for the Hindu Cosmogony. We answer that it is found in the "Asiatic Researches," Vol. V, and is as follows :

"This Universe existed only in the first idea, yet unexpanded, as if involved in darkness, imperceptible, undefinable, undiscoverable by reason, and undiscovered by revelation, as if it were wholly immersed in sleep.

When the soul self-existing Power himself undiscerned but making this world discernible, with five elements and other principles of nature, appeared with undiminished glory, expanding his idea or dispelling the gloom.

He whom the mind alone can perceive, whose essence eludes the external organs, who has no visible parts, who exists from eternity, even he, the Soul of all beings, whom no being can comprehend, *shone forth* in person.

He having willed to produce various beings from his own divine substance, first, *with a thought* created the waters.

The waters are called nara, because they are the production of Nara, the Spirit of God ; and since they were his first ayana, or place of motion, he thence is called Narayana, or "moving on the waters."

From that which is, the First Cause, not the object of sense, existing everywhere in substance, not existing to our perception, without beginning or end, was produced the Divine Mind.

He framed the heaven above, and the earth beneath ; in the midst he placed the subtle Æther, the eight regions, and the permanent receptacle of waters.

He framed all creatures.

He too assigned to all creatures distinct names, distinct acts, and distinct occupations.

He gave being to time and the divisions of time, to the stars, and also to the planets ; to rivers, oceans, and mountains ; to level plains and uneven valleys.

For the sake of distinguishing actions he made a total difference between right and wrong.

Having divided his own substance, the Mighty Power became half male, and half female.

He whose powers are incomprehensible, having created this universe, was again absorbed in the Spirit, changing the time of energy to the time of repose."

WHAT WAS THE SIZE AND WEIGHT OF THE TABLES OF STONE ? According to the *Nedarim*, (fol. xxxviii, col. 8), the Tables of Stone of Moses were 6 ells long, 6 broad, and 3 thick. It may perhaps help the reader to have some idea of the strength of Moses if we work out arithmetically the size and probable weight of these stone slabs according to the *Talmud*. Taking the Hebrew *a'm'h* (cubit or ell) at its lowest estimate, that is, 18 inches, each slab would be 9 feet long, 9 feet wide, and  $4\frac{1}{2}$  feet thick. Reckoning 13 cubit feet to the ton, the Tables would weigh upwards of 28 tons. The figures are thus :

$$9 \times 9 \times 4\frac{1}{2} = 364\frac{1}{2} \div 13 = 28 \text{ tons, } 0 \text{ cwt., } 3 \text{ qrs., } 2\frac{4}{8} \text{ lbs. each.}$$

THE DODEKAPHYLON. (Vol. V, p. 148.) The word *dodekaphylon* is Greek and simply means the "twelve brethren," that is, the twelve sons of Jacob, or twelve tribes. Their prototypes were the twelve Apostles of Jesus.

THE TWELVE ANGELS, APOSTLES, PROPHETS, SIGNS, TRIBES, ETC. Several questions have been in stock for months all bearing on these subjects : the breast-plate of judgment, the zodiacal signs as ascribed to the tribes, the precious stones, and the angels of God. These are subjects on which there is much speculation. The most elaborate work on the zodiac, that we have seen, is entitled "Mazzaroth, or the Constellations," in four parts, by Frances Rolleston of Keswick, Eng., 4 Parts bound together, 8vo., pp. 216 ; with "Mizraim, or Astronomy in Egypt," pp. 30. The latter gives the ancient Egyptian Zodiac and Planisphere of Denderah, and the Zodiac of Esné with plates. The description of both of these are quite full. These subject cover a wide range, and as the tabular form conveys much of the information asked

for, we give two ; the first compiled from "Mazzaroth," and the second compiled from Barrett's "Magus." By these it will be seen that there are two arrangements. These assignments are based on certain scriptures : Gen. xxix, xxxv, and xlix ; Ex. xxviii, 15-22 ; Num. i-ii ; Deut. xxxii, 8 ; Col. i, 16 ; Rev. vii, 4-8 ; xxi, 12-21 ; xxii, 2.

The tables will suggest their own interpretation. The arrangement of the breast-plate of the high-priest was as follows, according to the "Cyclopædia" of McClintock & Strong, *Art.* "Breast-plate." Some commentators put Joseph in place of "Ephraim," and Levi in place of "Manasseh." The translations of the original words for the precious stones differ.

Judah.	Issachar.	Zebulon.
Sardonyx.	Topaz.	Emerald.
Reuben.	Simeon.	Gad.
Carbuncle.	Sapphire.	Jasper.
Ephraim.	Manasseh.	Benjamin.
Ligure.	Agate.	Amethyst.
Dan.	Asher.	Naphtali.
Beryl.	Onyx.	Chrysolyte.

THE ORDER, EXODUS XXVIII, 18-19.

Sardis.	Topaz.	Carbuncle.	Emerald.	Sapphire.	Diamond.
Ligure.	Agate.	Amethyst.	Beryl.	Onyx.	Jasper.

THE ORDER, REVELATION XXI, 19-20.

Jasper.	Sapphire.	Chalcedony.	Emerald.	Sardonyx.	Sardius.
Chrysolite.	Beryl.	Topaz.	Chrysopraus.	Jacinth.	Amethyst.

The first arrangement by several commentators are by fours :

North,	Dan,	Winter,	Man,	Fomalhaut,	Matthew,
East,	Judah,	Summer,	Lion,	Regulus,	Mark,
West,	Ephraim,	Spring,	Ox,	Aldebaran,	Luke,
South,	Reuben,	Autumn,	Eagle,	Antares,	John.
Adam,	Cherubim,	Gen. 3, 24.	Michael,	Dan. 10, 3.	
Noah,	Ophanim,	Enoch 70, 9.	Raphael,	Enoch 70, 11.	
Moses,	Teraphim,	Gen. 31, 19.	Saxael,	Ex. 19, 20.	
Jesus,	Seraphim,	Isa. 6, 2.	Gabriel,	Dan. 8, 16.	



<b>Arles,</b>	<b>Dan,</b>	<b>Malachi,</b>	<b>Matthias,</b>	<b>Seraphim,</b>	<b>Malchidial.</b>
<b>Taurus,</b>	<b>Reuben,</b>	<b>Haggai,</b>	<b>Thaddeus,</b>	<b>Cherubim,</b>	<b>Asmodel.</b>
<b>Gemini,</b>	<b>Judah,</b>	<b>Zachariah,</b>	<b>Simon Zelotes,</b>	<b>Thrones,</b>	<b>Ambriel.</b>
<b>Cancer,</b>	<b>Manasseh,</b>	<b>Amos,</b>	<b>John,</b>	<b>Dominations,</b>	<b>Muriel.</b>
<b>Leo,</b>	<b>Asher,</b>	<b>Hosea,</b>	<b>Simon Peter,</b>	<b>Powers,</b>	<b>Verchiel.</b>
<b>Virgo,</b>	<b>Simeon,</b>	<b>Micah,</b>	<b>Andrew,</b>	<b>Virtues,</b>	<b>Hamaniel.</b>
<b>Libra,</b>	<b>Issachar,</b>	<b>Jonah,</b>	<b>Bartholemew,</b>	<b>Principalities,</b>	<b>Zuriel.</b>
<b>Scorpio,</b>	<b>Benjamin.</b>	<b>Obadiah,</b>	<b>Philip,</b>	<b>Archangels,</b>	<b>Barbiel.</b>
<b>Sagittarius,</b>	<b>Naphtali,</b>	<b>Zephaniah,</b>	<b>James the elder,</b>	<b>Angels,</b>	<b>Adnachiel.</b>
<b>Capricornus,</b>	<b>Gad,</b>	<b>Nahum,</b>	<b>Thomas,</b>	<b>Innocents,</b>	<b>Hanael.</b>
<b>Aquarius,</b>	<b>Zebulon,</b>	<b>Habakkuk,</b>	<b>Matthew,</b>	<b>Martyrs,</b>	<b>Gabriel.</b>
<b>Pisces,</b>	<b>Ephraim,</b>	<b>Joel,</b>	<b>James the younger,</b>	<b>Confessors,</b>	<b>Barchiel.</b>

<b>Dan,</b>	<b>Sardonyx,</b>	<b>Sang,</b>	<b>March,</b>	<b>Head,</b>	<b>Jod he vau he.</b>
<b>Reuben,</b>	<b>Cornelian,</b>	<b>Upright vervain,</b>	<b>April,</b>	<b>Neck,</b>	<b>Jod he he vav.</b>
<b>Judah,</b>	<b>Topaz,</b>	<b>Bending vervain,</b>	<b>May,</b>	<b>Arms,</b>	<b>Jod vau he he.</b>
<b>Manasseh,</b>	<b>Chalcedony,</b>	<b>Comfrey,</b>	<b>June,</b>	<b>Breast,</b>	<b>He vau he jod.</b>
<b>Asher,</b>	<b>Jasper,</b>	<b>Ladies' seal,</b>	<b>July,</b>	<b>Heart,</b>	<b>He vau jod he.</b>
<b>Simeon,</b>	<b>Emerald,</b>	<b>Calamint,</b>	<b>August,</b>	<b>Belly,</b>	<b>He he jod vau.</b>
<b>Issachar,</b>	<b>Beryl,</b>	<b>Scorgion grass,</b>	<b>September,</b>	<b>Kidneys,</b>	<b>Vau he he jod.</b>
<b>Benjamin,</b>	<b>Amethyst,</b>	<b>Mugwort,</b>	<b>Otober,</b>	<b>Genitals,</b>	<b>Vau he jod he.</b>
<b>Naphtali,</b>	<b>Hyacinth,</b>	<b>Pimpernel,</b>	<b>November,</b>	<b>Ham's,</b>	<b>Vau jod he he.</b>
<b>Gad,</b>	<b>Chrysopraus,</b>	<b>Dock,</b>	<b>December,</b>	<b>Knees,</b>	<b>He he vau jod.</b>
<b>Zebulon,</b>	<b>Crystal,</b>	<b>Dragonwort,</b>	<b>January,</b>	<b>Legs,</b>	<b>He jod vau he.</b>
<b>Ephraim,</b>	<b>Sapphire,</b>	<b>Aristolochy,</b>	<b>February,</b>	<b>Feet,</b>	<b>He jod he vau.</b>

♈	<i>Aries, the Ram.</i>	Taleh, <i>lamb sent forth,</i>	Isa. 40, 11.	Gad, <i>good fortune,</i>	Gen. 30, 8.
♉	<i>Taurus, the Bull.</i>	Shur, <i>coming to rule,</i>	Job 31, 7.	Joseph, <i>adding,</i>	Gen. 30, 24.
♊	<i>Gemini, the Twins.</i>	Thaumim, <i>united,</i>	Ex. 26, 34.	Benjamin, <i>right-hand son,</i>	Gen. 35. 18.
♋	<i>Cancer, the Crab.</i>	Sartan, <i>holds or binds,</i>	Gen. 49, 11.	Issachar, <i>recompense,</i>	Gen. 30, 18.
♌	<i>Leo, the Lion.</i>	Arieh, <i>rending,</i>	Ps. 30, 12.	Judah, <i>praise the Lord,</i>	Gen. 29, 35.
♍	<i>Virgo, the Virgin.</i>	Bethulah, <i>a virgin,</i>	Gen. 24, 16.	Zebulon, <i>dwelling.</i>	Gen. 30, 20.
♎	<i>Libra, the Scales.</i>	Mozanaim, <i>weighing,</i>	Isa. 40, 12.	Levi, <i>united,</i>	Gen. 30, 34.
♏	<i>Scorpio, the Scorpion.</i>	Akrab, <i>conflict,</i>	Ps. 91, 13.	Dan, <i>judging,</i>	Gen. 33, 6.
♐	<i>Sagittarius, the Archer.</i>	Kesith, <i>archer,</i>	Gen. 21, 20.	Asher, <i>happy,</i>	Gen. 30, 13.
♑	<i>Capricornus, the Goat.</i>	Gedi, <i>kid,</i>	Judges 6, 19.	Naphtali, <i>wrestling,</i>	Gen. 30, 8.
♒	<i>Aquarius, the Waterman.</i>	Deli, <i>water-urn,</i>	Num. 24, 7.	Reuben, <i>behold a son,</i>	Gen. 29, 32.
♓	<i>Pisces, the Fishes.</i>	Dagim, <i>fishes,</i>	Gen. 43, 16.	Simeon, <i>heard,</i>	Gen. 29, 33.

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Simon Peter,	Michael,	Judah,	Sardonyx,	Odem, <i>blood-red,</i>	Ex. 12, 13.
Andrew,	Uriel,	Issachar,	Topaz,	Pitdah, <i>reward,</i>	Num. 3, 49.
Matthew Levi,	Raziel,	Zebulon,	Emerald,	Bareketh, <i>shining,</i>	Ezek. 1, 13.
Philipi Phillipi,	Zadkiel,	Reuben,	Carbuncle,	Nophek, <i>pouring,</i>	1 Sam. 10, 1.
John Boanerges,	Gabriel,	Simeon,	Sapphire,	Saphir, <i>numbered,</i>	Ps. 87, 6.
Bartholemew,	Saxael,	Gad,	Jasper,	Jahalom, <i>breaking,</i>	Ps. 74, 6.
Thomas Didymus,	Haniel,	Joseph,	Ligure,	Leshem, <i>tongues,</i>	Isa. 5, 24.
James Alpheus,	Cerviel,	Levi,	Agate,	Shebo, <i>dwelling,</i>	Ps. 80, 1.
James Boanerges,	Raphael,	Benjamin,	Amythest,	Achlama, <i>restoring,</i>	Isa. 38, 16.
Simon Zelotes,	Peliel,	Naphtali,	Beryl,	Tarshish, <i>possessing,</i>	Num. 24, 18.
Lebbeus Thad.,	Jophiel,	Asher,	Onyx,	Shoham, <i>strong,</i>	Gen. 1. 49, 20.
Judas Iscariot,	Asazel,	Dan,	Chrysolite,	Jasphe, <i>bruised,</i>	Gen. 3, 15.

## *Questions and Answers.*

**THE MUSIC OF THE SPHERES.** (Vol. IV, p. 299.) Your correspondent "X. Y. Z." asked for the Pythagorean harmony, sometimes supposed to be the music of the spheres. This has been well, but partially, answered by the editor (Vol. IV, p. 341). I desire to add, however, some of the harmonies that have been discovered in nature. In "Burritt's Geography of the Heavens," the following are given as illustrating the coincidences of the inferior (interior) planets ;

Mercury—mean sidereal revolution— 87 d. 23 h. 15 m. 43 s.

Earth — mean sidereal revolution—365 d. 5 h. 48 m. 48 s.

7 periodical revolutions of the earth are equal to 29 of Mercury.

13	"	"	"	"	54	"
33	"	"	"	"	137	"
46	"	"	"	"	191	"

Venus—mean sidereal revolution—224 d. 16 h. 49 m. 8 s.

Earth—mean sidereal revolution—365 d. 5 h. 48 m. 48 s.

8 periodical revolutions of the earth are equal to 13 of Venus.

235	"	"	"	"	382	"
243	"	"	"	"	395	"
251	"	"	"	"	408	"
291	"	"	"	"	475	"

Prof. J. P. Cooke says in one of his scientific works :

In the solar system, for example, with the exception of Neptune, the intervals between the orbits of Mercury and the orbits of the other planets go on doubling, or nearly so, as we recede from the sun. (See Bode's Law, Vol. II, p. 330.) If we compare the periods of revolutions around the sun, expressed in days, we shall find another simple numerical relation, as shown by the following table :

Planets.	Observed.	Theoretical.	Fractions.
Neptune,	60,129	62,000	
Uranus,	30,687	31,000	$\frac{1}{2}$
Saturn,	10,759	10,333	$\frac{1}{3}$
Jupiter,	4,333	4,133	$\frac{2}{5}$
Asteroids,	1,200 to 2,000	1,550	$\frac{3}{8}$
Mars,	687	596	$\frac{5}{18}$
Earth,	365	366 $\frac{8}{18}$	$\frac{8}{18}$
Venus,	225	227 $\frac{1}{2}$	$\frac{1}{2}$
Mars,	88	87	$\frac{1}{84}$

We copy from Prof. Cooke a table of the law of phyllotaxis, illustrated in a few instances, from which it will be seen that even the

fractions of a circle, which occur in the arrangement of leaves around a stem, are of a very peculiar character :

LAW OF PHYLLOTAXIS, OR LEAF ARRANGEMENT.

	No. of Spirals.	No. of Leaves.	Frac- tion.	Angle of Leaf Divergence.
Grasses,	1	2	$\frac{1}{2}$	$180^{\circ}$
Sedges,	1	3	$\frac{1}{3}$	$120^{\circ}$
Apple, } Cherry, } Poplar, }	2	5	$\frac{2}{5}$	$144^{\circ}$
Holly, } Calistemon, } Aconite, }	3	8	$\frac{3}{8}$	$135^{\circ}$
Rosettes of Houseleek, } Cones of White Pine, }	5	13	$\frac{5}{13}$	$138^{\circ} 27' 6''$
Cones of European Larch,	8	21	$\frac{8}{21}$	$137^{\circ} 8' 34''$
Certain Pine Cones,	13	34	$\frac{13}{34}$	$137^{\circ} 38' 49''$
Certain Pine Cones,	21	55	$\frac{21}{55}$	$137^{\circ} 27' 16''$
Typical arrangement which would expose to } the sun's rays the greatest leaf-surface, }				$137^{\circ} 30' 28''$

After the first and second fractions,  $\frac{1}{2}$  and  $\frac{1}{3}$ , the third fraction is formed by adding the numerators of the two preceding fractions for a new numerator, and the denominators for a new denominator, thus giving  $\frac{2}{5}$ ,  $\frac{3}{8}$ , and so on. But this same peculiar series of fractions is found to be embodied in the orbits of the planets, as previously seen in the table. Thus the plants and the planets are in harmony and obey the same law. Thomas Hill in "Geometry and Faith," p. 88, remarks :

"The phyllotatic law is not of practical importance in the growth of plants ; they live and flourish on the rudest approach to it. But the tracing of these approximations up, in such very numerous instances, to the highest degree of accuracy, such as 55 : 44, and 34 : 89, one above, the other below the perfect, show that *the law of extreme and mean ratio is actually incorporated into the vegetable kingdom. The builder of the plant knew that law untold ages before the geometer invented it.*"

According to the Pythagorean system, the world is a piece of harmony, and man the full chord, which consists of a fundamental or tonic, its major third, its just fifth, and its octave. From this it will be readily understood that the diapason (*through all*) means the complete chord, or according to another system, a "microcosm of nature." Man touches Deity, passes through all the planets and touches the

earth. It is because he touches Deity that man believes he has himself an immortal soul, and because he runs through the planets that the planets influence his nature.

The philosopher knows why the sun (he) governs the man, and the moon (she) measures the months and governs the woman.

" From harmony, from heavenly harmony  
This universal frame began;  
From harmony to harmony  
Through all the compass of the notes it ran,  
The diapason closing full in man."  
" Song for St. Cecilia's Day."—*John Dryden.*

The ancients looked upon the universe as a living creature, and the followers of Paracelsus considered man a miniature representation of the universe. The universe was called the Macrocosm, and the man the Microcosm.

SAMUEL F. GOODWIN.

DEMONSTRATION OF THE MUSICAL SCALE. (Vol. V, p. 148.) Anthon says, in his " Classical Dictionary," under *Pythagoras* :

" Pythagoras considered music not only as an art to be judged of by the ear, but as a science to be reduced to mathematical principles and proportions. The musical chords are said to have been discovered by him in the following manner : As he was one day reflecting on this subject, and happening to pass by a smith's forge where several were successively striking with their hammers a piece of heated iron upon an anvil, he remarked that all the sounds produced by their strokes were harmonious excepting one. The sounds which he observed to be chords were the octave, the fifth, and the third ; but the sound which he perceived to lie between the third and the fifth he found to be discordant. Going into the workshop, he found that the diversity of sounds arose, not from the forms of the hammers, nor from the force with which they were struck, nor from the position of the iron, but merely with the difference of weight in the hammers. Taking, therefore, the exact weight of the several hammers, he went home and suspended four strings of the same substance, length, and thickness, and twisted in the same degree, and hung a weight at the lower end of each, respectively, equal to the weight of the hammers ; upon striking the strings he found that the musical chords of the strings corresponded with those of the hammers. Hence it is said he proceeded to form the musical scale, and to construct stringed instruments. His scale was, after his death, engraved on brass, and preserved in the temple of Juno at Samos."

FEAST OF ASSES. (Vol. V, p. 148.) A ridiculous festival of the Catholic church, celebrated in Rouen and some other cities in France, to commemorate the flight into Egypt. It was not uniformly ob-

served, but the following were among the ceremonies, especially at Beauvais. A young woman with a child on her arms was made to ride on an ass. Followed by the bishop and clergy she was conducted to the church, and a sermon was preached, in which the high qualities of the animal that enabled the Virgin and child to escape from Herod were lauded. During the ceremony a ludicrous composition, half in Latin, half in French, was sung in great vociferation, in praise of the animal, of which the last stanza may serve as a specimen :

" Amen dicas asine  
Jam satur de germine  
Amen, amen itera  
Aspenare vitera.

Hez va ! Hez va ! Hez va ! Hez va !  
Bialx sire asnez, car allez,  
Belle bouche car chantez."

In Rouen it was celebrated about Christmas ; in Beauvais on June 14. Several popes, papal legates, and bishops endeavored to suppress it, but it maintained itself till the 15th century, when Nicholas de Clemangis by a book against it, and especially by a decree issued from the council of Basle, caused the suppression of this and a number of similar festivals.

**TRIANGLE CONTROVERSY.** (Vol. V, p. 148.) This was a dispute occasioned by a book published by Samuel Whelpley, entitled " The Triangle," against limited atonement, inability, and immediate imputation. The controversy led to the trial of Albert Barnes and of Lyman Beecher for alleged heresy, and finally to the disruption of the Presbyterian church in 1837.

**DRAGOONS.** (Vol. V, p. 148.) From the French *dragon*, probably from the Latin *dragonarius*, the bearer of a standard upon which was represented the figure of a dragon. A name given to a species of cavalry trained and armed to act either on foot or on horseback, as emergencies required. The origin of this species of troops has been ascribed by Pere Daniel to the Mersechel de Brissac. There is but little doubt that a species of soldiers, answering to the above description, was in use among the ancient Romans. At present they form part of the military force of the powers of Europe. The first regiment of dragoons raised in Great Britain was in 1681, and it was called the Royal Regiment of Dragoons of North Britain, now the Scotch Greys.

**MOVABLE, AND IMMOVABLE FEASTS.** (Vol. V, p. 148.) The Catholic church has retained nearly all the feasts and festivals of the primitive church, with the later ones of the apostles and martyrs, and have added largely to the list since the early church, so that nearly every day in the year is now recognized in memory of some saint. In McClintock & Strong's "Cyclopædia," Vol. III, p. 513, a catalogue of 269 are given with the dates of recognition. The list is too long to reproduce here. We give, however, those recognized by the Church of England :

**MOVABLE FEASTS AND HOLY DAYS.**

Advent ; Septuagesima ; Sexagesima ; Quinquagesima ; Quadragesima, and the four following Sundays : Ash Wednesday ; Palm Sunday ; Maundy Thursday ; Good Friday ; Easter Eve (*Sabbatum Magnum*) ; Easter Day ; Sundays after Easter ; Ascension Day ; Whit Sunday ; and Trinity Sunday.

**IMMOVABLE FEASTS AND HOLY DAYS.**

Jan. 1, the Circumcision of our Lord.	July 25, St. James the Apostle.
Jan. 6, the Epiphany.	Aug. 24, St. Bartholemew the Apostle.
Jan. 25, the Conversion of Paul.	Sept. 21, St. Matthew the Apostle and Evangelist.
Feb. 2, Presentation of Christ in the Temple, or the Purification of the Virgin.	Sept. 29, St. Michael and all the Holy Angels.
Feb. 24, St. Matthias the elected Apostle.	Oct. 18, St. Luke the Evangelist.
Mar. 25, the Annunciation of the Blessed Virgin Mary.	Oct. 28, St. Simon and St. Jude the Apostles.
Apr. 25, St. Mark the Evangelist.	Nov. 1, All Saints' Day.
May 1, St. Philip and St. James the Apostles.	Nov. 30, St. Andrew the Apostle.
June 11, St. Barnabas's Day.	Dec. 21, St. Thomas the Apostle.
June 24, St. John the Baptist.	Dec. 25, Nativity of our Lord.
June 29, St. Peter the Apostle.	Dec. 26, St. Stephen the Deacon.
June 29, St. Paul, writer of epistles.	Dec. 27, St. John the Evangelist and Apostle.
	Dec. 28, the Innocents' Day.

Thus it will be observed the twelve apostles (excepting Judas Iscariot) are each recognized with an immovable feast, Matthias supplying the place of Judas ; the five evangelists, three of them (Matthew, John, Philip) being also apostles ; one deacon ; the archangel Michael and the hierarchy ; John the Baptist ; Paul the "apostle" to the Gentiles, and Barnabas one of the seventy.

**THE THREE DIPPERS.** (Vol. V, p. 148.) There are three configurations of stars which are quite familiarly known as "the dippers."

1. *The Dipper*, so called, is in the constellation *Ursa Major* or the Great Bear, the stars forming the tail of the bear also form the handle of the dipper. The first star in the handle, *Benetnasch*; the second, *Mizar*; the third, *Alioth*; and the four, *Megres*, *Phad*, *Merak*, *Dudhe*, form the bowl. The 2 latter stars are called "The Pointers," because they point or guide the eye to the Pole star (*Cynosura*), 29 degrees distant. The top bowl-stars are 10 degrees apart; the bottom, 8 degrees apart; the depth next to handle,  $4\frac{1}{2}$  degrees apart; the outer end (the Pointers)  $5\frac{1}{2}$  degrees apart.

*The Little Dipper* so called, is in *Ursa Minor*, or the Lesser Bear, but situated similarly in respect to the constellation, the tail forming the handle of the little dipper, and the handle turning up. "The Pointers" guide the eye to the first star in the handle—the Pole star—the *Cynosura*, called also *Alruccaba*. The two stars in this dipper corresponding to "the Pointers" are named *Kochab* and *Gamma* and these are called "The Guards," because they seem to guard the Lesser Bear around the North Pole.

*The Milk Dipper* is in the constellation *Sagittarius*, or the Archer, one of the southern zodiacal signs. It is so called, because lying partly in the Milky Way. It is turned nearly bottom up and formed of stars of the 3d and 4th magnitude.

**WHO WAS KING RAMIREZ?** (Vol. V, p. 68.) The picture is really called by the painter, "La Campana de Huesca," ("The Bell of Huseca,") and its hero is Ramero, or Ramirez II, king of Aragon (1090-1147). He had taken monastic vows, but on the death of his brother, Alfonso I, in 1134, was released by Papal dispensation, succeeded to the throne, and married. The prince of Castile, Alphonso VII, made war on the new monarch, with the connivance of the disaffected nobles and merchants of Aragon. Ramirez, driven to his Castle of Mondus for refuge, sent to seek advice from the abbot of the monastery of San Ponce de Tomeras. The latter simply took the messenger into the cloister garden, and for an answer, cut off the heads of the tallest flowers and weeds with a sickle. Ramirez took the hint, as, indeed, any one familiar with the story of Tarquin might readily have done. He summoned the Cortes of Huseca to his castle, and told them he intended to construct a bell so sonorous that it



should be heard all over Aragon. Soon after he was enabled to keep his word. He imprisoned many of the most influential of the nobles of Aragon, and decapitated fifteen of them at Huseca. The remainder he caused to be brought to his palace, and the pictures shows him at the moment, when accompanied by his favorite dog, he pointed out to the court his metaphorical bell, the beheaded ringleaders, with the head of the arch-rebel dangling from the bell rope. After concluding peace with Alphonzo, he inaugurated various successful reforms, abdicated in favor of his two-year-old daughter, Petronila, in 1137, resumed his monastic vows, and died ten years later in the cloister of San Pedro, in Huseca. A. P. SOUTHWICK, Baltimore, Md.

**HUNDREDS.** (Vol. V, p. 148.) Brande's "Encyclopædia" says that a hundred is a territorial division having for its object the more convenient and efficient administration of justice. Formerly it was common in other countries, particularly in England, France, and Lombardy, and adopted in this country as the subdivision of a county. It is referred to the time of King Alfred, and its institution, as well as that of county and tything, is upon no precise authority. It is probable that the division was of an older date, and that it was not introduced into all parts of England at the same time. The term had not the same application in all parts, for the meaning usually given to it was a district containing a hundred free families ; and in the north it included a much larger district than in the south of England. In the north it often took the name of Wapentakes. To each hundred belonged a court baron similar in nature and extent of jurisdiction to the county court and court leet. The essential use of the hundred was in the liability of the hundreders, when offences were committed within their district, either to produce the offender or make good the damages. The division into hundreds is frequently used in acts of parliament as a convenient mode of reference. The term hundred was applied to the counties of Delaware in the United States.

**CICERONES.** (Vol. V, p. 148.) A cicerone is a name originally given by the Italians to those persons who pointed out to travelers the interesting objects with which Italy abounds. It is applied universally at present to any individual who acts as a guide. The application of the term Cicerone had probably its origin in the ironical exclamation, *E un Cicerone* (he is a Cicero), being elicited from the traveler by the well known garrulity of the Italian guides.

**FESCENNINE VERSES.** (Vol. V, p. 148.) These verses are so termed from Fescennia, an Etrurian town where they first had their origin. They were rude extemporaneous pieces of poetry recited by the youth of Latium and Etruria at rustic festivals, especially at harvest home, with gestures adapted to the sense. They consisted chiefly of rustic lines of raillery and abuse, a species of humor very much in vogue with the Grecian and Egyptian country people. The verses are remarkable for having given rise to satire, the only class of poetry of native Italian growth.

**GREEK FIRE.** (Vol. V, p. 56.) I remember an article on "Greek Fire" in one of the English quarterlies (I think the *Westminster Review*), many years ago. The writer seemed to think that it was a Chinese invention, if I remember aright, and of the character of gunpowder. I suspect myself that petroleum was part of the compound, and that spontaneous combustion was depended upon for its ignition. Perry Chand Mitra of Calcutta wrote a little monograph, now in my possession, which was designed to show that the Hindûs of the Punjab possessed gunpowder and used it in explosives for military purposes; and that Alexander the Great was once defeated by their use.

A. WILDER.

**GNOSTICISM.** This word is derived from the Greek *gnosis* (knowledge), that is, a higher kind of knowledge. Those who claimed to possess it, claimed to have acquired the higher wisdom, and were the Gnostics. Paul speaks of a "gnosis" falsely so called, (I *Tim.* xvi, 20). They were a secret sect at the beginning of the Christian era.

**SALIENT POINTS IN THE GREAT PYRAMID.** What are some of the leading claims of those who believe the Great Pyramid of Egypt was built for a Metrological Monument ?

INQUIRER II.

The Great Pyramid of Ghized has been established to be the oldest monument in Egypt. Mr. C. Piazzi Smyth, in view of this fact, has devoted a long period of time to studying, not its hieroglyphics, but the peculiar relations of its structure, position, etc. He has by a long series of reasoning, arrived at the following conclusions :

1. The Great Pyramid is accurately located as regards the points of compass (orientation), and its base is practically a perfect square.
2. The vertical height of the pyramid (5,835 inches), is to the sum of the four sides of its base (63,702.36+ inches), as the radius of a

circle, approximately, is to the circumference ; or as 1 to  $2\pi$  ; or as 1 to 6.9832.

3. The area of the meridional section of the pyramid is to the area of the base, as 1 to  $\pi$ .

4. The length of the side of the base (9,156.45+ inches), divided by the contents of the pyramidal cubit (25, 025 cubic inches), gives the number 366.24+, which equals the number of revolutions of the earth on its axis during the sidereal year.

5. The distance of the sun from the earth, indicated by the height of the pyramid, is given by the following relation :

$$10^9 \times \text{the height of the pyramid} = 92,093,000 \text{ miles,}$$

and the corresponding parallax is 8."87648. This distance from the sun is precisely that to which the latest investigations approach.

6. The four faces of the pyramid are equally inclined on the central axis, the angle being  $51^\circ 51' 14.3''$ .

7. The inch, as deduced from the great pyramid, equals 1.0001 English inches.

8. The inch of the pyramid is the 500,000,000th part of the polar axis of the earth.

9. The cubit of the pyramid equals 25 of these inches ; it represents the 20,000,000th part of the polar axis, or the 10,000,000th part of the semi-axis.

10. The modern value of the space passed over by the earth in 24 hours in its orbit around the sun equals  $10^{11}$  inches of the pyramid, or 100,000,000,000 pyramidal inches.

11. The weight of the pyramid is the fraction  $(\frac{1}{10})^{15}$ , or involved it is  $\frac{1}{1000000000000000}$  of the weight of the earth.

12. The pyramid indicates that the average temperature of the total surface of the earth is  $20^\circ$  centigrade, or  $\frac{1}{3}$  the interval between the temperature of melting ice and of boiling water.

13. The sum of the two diagonals of the pyramid, valued in English inches, is 25,859, a number sensibly equal to the year that separates the successive returns of the meridian of some fixed star ; for example, *a Draconis*, or the number of years that the sun occupies in traversing the circle of the ecliptic.

14. The pyramid indicates that the density of the earth is 5.7, water being taken as unity. This density has been found by experimental methods, subject to great uncertainty, to be 5.67, 5.568, and 5.316, of which the average differs little from the figures given by the pyramid.

## QUESTIONS.

1. Of whom was it said that he would eat at a breakfast, 500 figs, 100 peaches, 10 melons, 20 bunches of grapes, 100 small birds, and 400 oysters?  
FENLON FOSTER.

2. Who first called man the Microcosm in contradistinction to the world as being the Macracosm or Megacosm.  
SANFORD.

3. What President of the United States first used the expression, "By the Eternal," to emphasize his determination, and when, and on what occasion?  
SANFORD.

4. What is the game called *Pharaon*, and where did it originate?  
JONATHAN.

5. What historical writer received the name *Rambam*, and why was he so called?  
JONATHAN.

6. Pythagoras advised his disciples to "abstain from beans." What reasons are given for this advice?  
ENQUIRER II.

7. Why was one of the leading thoroughfares in London called *Paternoster Row* ("Our Father")?  
G. S. CLARK.

8. "Work done is won, soul's joy lies in the doing." Can some reader give me the correct version and source of the above?  
G. F. K.

9. Which are considered the seven greatest hymns of the Christian dispensation?  
WELLINGTON HOWARD.

10. There is a tradition or record that all person before the days of the patriarch Jacob, by sneezing slew themselves, and that Jacob obtained a relaxation of such a sudden death. Where can the account be found.  
WELLINGTON HOWARD.

11. What is the origin of the expression: "*A sic vos non vobis* affair."  
AGNOSTIC.

12. Does there actually exist fire known as "Jack-with-a-lantern," "Will-o'-the-Wisp," "St. Elmo's Fire," etc.?  
JEROME.

13. Who was the "Brahan Seer," and what were the character of his prophecies?  
M. M. W.

14. Who was Potter Christ who lived somewhere in the West of the United States several years ago, and left a work for the guide of his followers?  
M. M. W.

15. Who was *Barchoeab* who took up arms against Rome, under the emperor Adrian?  
SEARCHER.

16. Why was the Crescent adopted as the symbol of the followers of Mohammed?  
SEARCHER.

17. In the "Queen's Wake," a Scottish poem a Rev. Mr. Grey is immortalized as the "bard of Greece," and author of a poem entitled "India." Where can this poem on India be found?  
ENOCH.

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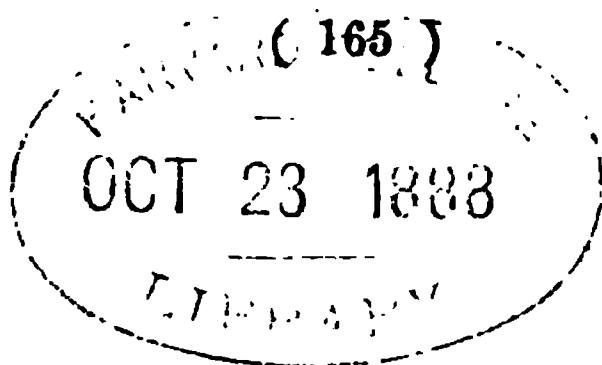












MISCELLANEOUS

NOTES AND QUERIES,

WITH ANSWERS.

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*"The laws of nature are the mathematical thoughts of God."* — PLATO

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VOL. V.

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*THE ROYAL GAME.*

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This game the Persian magi did invent,  
The force of Eastern wisdom to express;  
From thence to busy Europeans sent,  
And styled, by modern Lombards, pensive chess.

—SIR JOHN DENHAM.

The origin and history of "The Game and Playe of the Chesse," as Caxton quaintly denominates it, is involved in obscurity. Some authorities say it was first played before Troy, being invented by Palamedes to amuse the Grecian chiefs who were disgusted with the tediousness of the siege, while others claim it to be synonymous with the Roman *Ludus Latrunculorum*. There is also an Egyptian caricature in which a lion and a unicorn are indulging in a game which resembles this one, and even in distant China the natives say it was invented for the diversion of some troops disposed for mutiny. But the most probable conjecture is that it descended from the Brahmins through Persia to Arabia\* about the sixth century, and passed into Europe two or three hundred years later.

Ravan, king of Ceylon, was besieged, it is said, in a strong fortress, and a Hindoo mathematician named Seffa devised the game for the amusement of his royal master, who mimicked the movements of his

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\* It is a curious fact that many of the terms employed in the game are palpably corruptions from Indian, Persian or Arabic words. Thus, check from the Persian *schach*, or king, and *mat*, in the same language, signify dead, hence "check-mate," or the king is dead.

enemies on the tiny battle-field before him. The monarch was so well pleased with the invention that he desired the philosopher to name any reward adequate to his ingenuity, and was astonished that he did not ask for wealth, but requested only a modest (?) quantity of wheat, equal to the number of grains arising from the successive doubling of a single grain for the first square of the chess-board, two for the second, and so on, doubling each product until the sixty-fourth square was reached, and finally adding all the products together. When the quantity of wheat which thus arose was computed, it was found to be greater than the whole world could produce in ten years.\*

The Indian game differs somewhat from the European. The king, for example, is not permitted to move beyond a certain fortress, and the elephants, answering to our bishops, (and called in France the fools,) are not allowed to cross a fixed line of squares called a river. If a pawn has the good fortune to reach the square of the adverse king, or general, he too becomes a general; if he steps into the square of a knight, castle or bishop, he becomes that officer whose station he occupies,—but not until his master has lost such a one beforehand; otherwise he must endeavor to protect his pawn until the vacancy occurs. The Indian name of the piece we call queen is termed *pherz*, which signifies a vizier, or minister. When the game was brought into Spain from Arabia, this piece was denominated *fiercir*, and among old French authors we still see the gradually acquired name of *fierge*. The transition from *fierge* to *vierge* was very natural, due somewhat, perhaps, from its position by the side of the king. The absurdity of the metamorphosis of the vizier into a queen has remained to the present time, and the incongruity is still further increased by allowing a pawn or common soldier to change his rank and sex when he has reached the eighth square on his own “queen’s” file. The word *rokh* in the Indian language signifies a dromedary, and the movements of this piece correspond with those of the rook or castle of the present day.

The following description of a checkmate is taken from an ancient poem on chess:—

“ As when an Ass that from the common strays,  
And breaks through fences, in fat meads to graze,  
Is by the farmer banged from off the ground,  
And children chase him to the parish pound;  
The heavy stubborn beast, with motion slow,  
And step by step, just budes, loth to go;

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\* “ This question may be solved by multiplication and addition, but more expeditiously by geometrical progression. By this method it appears that the number of grains of wheat amounts to 18,446,744,073,709,551,615. Allowing 9,216 grains to an English pint, the quantity in bushels is easily calculated. For 9,216 multiplied by 8 gives 73,728 grains in a gallon, and that by 8 gives 589,824 grains in a bushel. Dividing the original number by this last, we have 31,274,997,412,295 for the number of bushels. Now, if 30 bushels be the average product of an acre in a year, it requires 1,042,499,913,743 acres to produce so many bushels, or about eight times the circumference of the globe.”—*Encyclopædia Edniensis*.

So moves of majesty, the bulky weight,  
 Now regal only in his port and gate:  
 His guards, his army, and his pride, subdued,  
 By pawns insulted, little pawns pursued;  
 Till penn'd and pounded by the puny bands,  
 Where late he reigned, he there close prisoner stands."

When a messenger informed Alamin Ben Haroun that the city of Bagdad was besieged, the caliph silenced him, saying, "Don't you see that I am on the point of giving checkmate?" The same potentate sought out the best players of his empire, brought them to court and pensioned them. His father, Abdallah III, used to bewail his sad fate in having more capacity for governing nations than for moving chess-men.

Ben Ziad, a caliph of Mecca, was also very fond of the game. "Is it not extraordinary," said he to a favorite with whom he was playing, "that sixteen pieces of ivory, placed on so small a plane, should give me more trouble to manage than so many millions of men that cover the vast empire of my domains?"

Seneca relates of one Canius Julius, that he was playing at chess when the centurion, who was leading a troop of condemned men to death, commanded him also to join them. As the game was unfinished, he said to his opponent, "Beware, when I am dead, that thou beliest me not, and say thou hast won the game." Then addressing the centurion, he said, "Bear me witness that I have the advantage by one," and directed his steps to the place of execution.

Although we can find no definite traces of the game in England before its introduction by the French in the eleventh century, it was scattered over Europe at the time of Charlemagne\*, and received a new impulse upon the return of the crusaders. Alphonso X, king of Castile, and Pope Innocent III, are both said to have written works upon it, and from an unknown Italian author of the thirteenth century an illuminated missal is extant containing a treatise in Latin hexameter upon chess. The manuscript states, after describing the pieces and moves, that the board represents the heavens, the squares the constellations, and the pieces the sun, moon and planets. He then continues: — "The king is the sun, the pawn is Saturn, the knight is Mars, the queen is Venus, Alphynus the bishop is Jupiter, and the rook is the traveling moon.†

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\*A set of chess-men said to have been those with which this emperor was wont to play, are in the royal treasury of St. Denis, near Paris. The king is seated on a throne, the whole figure being about a foot in height. The queen, crowned, occupies a smaller throne. Two archers, who take the place of bishops, hold each a drawn bow; next to these are two centaurs, and lastly two elephants. The sixteen pawns resemble soldiers, and are armed with swords.

†"Rex est sol, pedes est Saturnus, Mars quodque miles, regia virgo Venus, Alphynus Episcopus ipse est Iuppiter, et roccus discurrens luna."

In the *Syntagma Dissertagmionum* of Thomas Hyde, Professor of Arabic in the University of Oxford, published in 1694, we read that the ancient Irish were exceedingly fond of chess, and that, amongst them, the possession of some valuable estates has been decided by the game. The heirs of two noble families, the doctor says, hold their lands upon this tenure, that one of them shall encounter the other at chess, and that whoever of them should conquer shall retain the estate of his opponent; therefore, they, managing the affair prudently among themselves, meet by appointment perhaps once a year to indulge in this pastime, one of them makes a move, and the other takes a year before replying. A scribe commits to writing the situation of the game, which by this method may continue from one generation to another.

Prince Henry, the youngest son of the Conqueror, afterwards Henry I, was sent with his brother Robert to the French court, and on a certain day after dinner he encountered Louis, the king's eldest son, at chess, and won so much money from him that Louis, losing his temper, reproached Henry with the base birth of his father and threw the pieces in his face. Henry took up the board and struck his antagonist with such force that he drew blood, and would have killed him had not his brother Robert interfered. King John was also a chess player, and was so engrossed in a game when the deputies from Rouen came to notify him that their city was besieged by Philip Augustus, that he turned a deaf ear to their words until he had finished.

Some of the early players were quite expert at this pursuit while blindfolded, and others could play three or four games at one time. A Saracen named Buzicca visited Florence in 1266, and played simultaneously with three of the most skillful masters in that city. He saw but one board of the three, and won two games, the third ending in a drawn battle. Salvio, who wrote a treatise on chess, Zelone, Mediano, and the "chess-bishop," Ruy Lopez of Spain, Mangrolino of Florence, and Paoli Boi of Syracuse, were all accomplished blindfold players. Keysler informs us that Sacchieri, a Jesuit of Turin, who possessed a most wonderful memory, could play with three different opponents, without seeing one of the boards, and moreover converse with the company during the time of play. If any dispute happened to arise about the situation of any piece or pawn, he could repeat every move made by both contestants from the beginning of the game, in order to ascertain the location of the piece.

Tamerlane was extremely fond of chess, and invented several forms of chess boards for the improvement of the military art, in order to represent the various evolutions of an army on the battle field. He himself was engaged in a game during the very time of the decisive battle with Bajazet, the Turkish emperor, who was totally defeated and taken prisoner. In the "Chronicle of the Moorish Kings of Granada," there is related that, in 1396, Mehemed Balba seized upon the

crown which justly belonged to his elder brother, and spent his life in a succession of disasters. His wars with Castile always terminated so unsuccessfully, that finally, finding his position desperate, he despatched an alcade to the fort of Salobrena to assassinate his brother Jussef, lest those who espoused the cause of the latter should form any obstacles to his (Mehemed's) son's succession. The officer found Jussef engaged at a game of chess with a priest, and when the prince learned the motive of the messenger, he begged for two hours' respite, which was at first denied, but finally the officer relented so far, in that he allowed him to finish the game; before its termination, however, word was brought of the death of Mehemed, and the unanimous election of Jussef to the throne.

In 1475 appeared the second book ever printed in the English language, *The Game and Playe of the Chesse*.\* "Fynysshid the last day of Marche the yer of our lord god. a. thousand foure honderd and lxxiiij." It contains little or nothing, however, upon the subject which its title-page would lead us to surmise, being devoted to "thauctorites, dictees, and stories of auncient Doctours philosophes poetes and of other wyse men whiche been recounted & applied vnto the moralite of the publike wele as well as of the nobles as of the comyn peple after the game and playe of the chesse."


We may here recount a few of the famous Englishmen who took delight in the "Royal game." Among the monarchs besides those already mentioned, we find Elizabeth, James I and Charles I, the latter of whom was indulging in this pastime when news was brought of the final intention of the Scots to sell him to the English. He continued his game with the utmost composure, and no one could have surmised that the tidings he had received were the reverse of agreeable. William of Orange, Prince Albert and Queen Victoria deserve enumeration among the chess fraternity, and Prince Leopold distinguished himself at Oxford as a fine player.

Philosophy, Science and Art are represented by such names as Lord Bacon, Wollaston the physician, Dr. Roget the mathematician, Flaxman the sculptor, and Proctor the astronomer, who occasionally found time to compose a problem.

But it is among the literati that our search is mostly rewarded, and truly, did space permit, we could mention a host of celebrities who are devotees of the mystic board. Amongst others we discover the Benedictine monk, John Lydgate, the author of the *Anatomy of Melancholy*, and the almost forgotten poets, Abraham Cowley, Sir John Denham,

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\* Only twelve copies of this book are known to exist, and consequently it must ever remain a  *rara avis* among collectors. In 1813, Alchorne's copy, wanting six leaves, fetched £54 12sh. at auction, while in 1869 Mr. Quaritch offered a copy for sale, wanting seven leaves, for four hundred pounds!!

and Nicholas Breton. The last named has given us a beautiful poetical description of chess, concluding with the following : 

L'ENVOY.

“Then rule with care, and quicke conceit,  
And fight with knowledge, as with force;  
So beare a braine, to dash deceit,  
And work with reason and remorse.  
Forgive a fault when young men plaie,  
So give a mate, and go your way.

“And when you plaie beware of checke,  
Know how to save and give a knecke,  
And with a checke beware of mate;  
But chiefe, ware had I wist too late:  
Lose not the Queene, for ten to one,  
If she be lost the game is gone.”

Sir John Harrington, Walter Raleigh, Earl Chatham, Warton and Edmund Burke must not be forgotten in our list, and Sir W. Jones, Sir Walter Scott, Sydney Smith, Warren the novelist and Buckle the historian were also attached to the game. It may not be generally known that the friendship between Samuel Johnson and Mr. Baretti, which had existed for over thirty years, was broken off on account of a game of chess. It seems that Oinai, a native of Otaheite, became considerably proficient in this game while in London, and at one time defeated Mr. Baretti. The latter was frequently and occasionally unmercifully rallied by the great lexicographer on the subject, and “at length,” says Mr. Baretti, “he pushed his banter on at such a rate that he chafed me, and made me so angry that, not being able to put a stop to it, I snatched up my hat and stick and quitted him in a most choleric mood.” After the doctor had learned how thoroughly he had offended his friend, he again invited him to his house; but Mr. Baretti was then in the country, and before he returned Johnson was dead.

There is a story told of the Earl of Sunderland, minister to George I., who was a good player, that he upon a certain day had for his opponents the Laird of Cluny and the learned Cunningham, the editor of Horace. Cunningham with too much skill and too much sincerity beat his lordship. “The Earl was so fretted at his superiority and surliness that he dismissed him without any reward. Cluny allowed himself sometimes to be beaten, and by that means got his pardon, with something handsome besides.”

Benjamin Franklin compared the game of chess to human life, “in which we have points to gain, and competitors or adversaries to contend with, and in which there is a great variety of good and ill events that are, in some degree, the effects of prudence or the want of it.” He contends that by studying it we learn several things, viz.:—forelight, circumspection, caution, and finally “the habit of not being discouraged by present bad appearances in the state of our affairs, the

habit of hoping for a favorable change, and that of persevering in the search of resources."

Catherine de Medici, Henri IV. and Louis XIII. were chess players. Louis XIV., who detested games of chance, and would not allow them to be played at court, was so passionately addicted to chess that he pursued it even when riding in his carriage. Each man had a pin at his foot, which, being stuck into a padded chess-board, resisted the joltings of the royal vehicle. Philidor says that a set of chessmen belonging to Prince Eugene were in the possession of a coffee-house keeper at Rotterdam. They were three inches in height, made of solid chased silver, not different in color, but sufficiently distinguished by one side representing Europeans and the other Mongolians. The famous Prince of Conde seems to have held a similar opinion with Tamerlane, for he contended that it was necessary for an officer, in order to become a good general, to understand chess thoroughly.

Among other French monarchs and statesmen we must not omit, as being partial to the game, the names of Richelieu, Marshal Saxe, Robespierre and Bonaparte, as well as the latter's marshals, Berthier, Murat, and Eugene de Beauharnais. Two of Napoleon's greatest antagonists have figured in chess history: one, Admiral Tchichakoff, who opposed his passage to the Beresina, and the other no less a personage than the Iron Duke himself.

French authors as well as scientists seem to have found spare time for this pursuit, the names of Helvetius the physician, Comenius the grammarian, Voltaire, Rousseau, Marmontel, Baron Holbach, Lacroix the jurist, and Diderot and D'Alembert the encyclopædists, figuring among the brotherhood. D'Aguesseau, the chancellor of France, was very fond of this exercise, and was accustomed to play with M. de Legalle, the master of Philidor and the best player of his time, for half a crown a game. The latter once proposed deep play to the chancellor, explaining it to be a living at Vincennes, that he wished to procure for an Abbé of his acquaintance. D'Aguesseau had the move, and in advancing his pawn he said "*va l'Abbé.*" His opponent, though in the advantage, did not desire to win the game, and upon his resigning the chancellor told him that his own victory should not prejudice his friend, and accordingly he gave him the benefice.

There is a curious anecdote told of Ferrand, Count of Flanders, that he was in the habit of being constantly defeated by his wife, with whom he was accustomed to play at chess, so that a mutual hatred took place between them, which finally rose to such a height that when her husband was taken prisoner at the battle of Bovines, the countess suffered him to remain confined a long time, though she could easily have procured his release.

Ferdinand of Aragon, Sebastian king of Portugal, and Philip II. of



Spain, must not be forgotten in our enumeration. A Spanish nobleman having frequently played at chess with the latter monarch, and being a far more skillful player, won continually, and finally perceived that his majesty was much ruffled from chagrin when he rose from play. The lord, when he returned home, said to his family: "My children, we have nothing more to do at court; there we must expect no favor, for the king is offended at my having won of him every game of chess." Philip considered that he ought to suffer no rival, not reflecting that this game depends solely on the genius of the players, and not on the quantity of their possessions.

Olaus Magnus, who flourished in the sixteenth century, informs us that in his time it was "a custom among the most illustrious Goths and Swedes, when they would honestly marry their daughters, to prove the disposition of the suitors that came to them, and to know their passions especially, by playing with them at tables or chess. For at these games their anger, love, peevishness, covetousness, dullness, and many more mad pranks, passions and motives of their minds, and the forces and properties of their fortunes, are used to be seen: as whether the wooer be rudely disposed, that he will indiscreetly rejoice and suddenly triumph when he wins; or whether, when he is wronged, he can patiently endure it, and wisely put it off."

Frederick the Great was a chess player, and occasionally indulged in a game with Marshal Keith, with living pieces, in which he employed the services of his soldiers. So also were Leibnitz, Grimm, Schumacher, Wolff, Euler and Kempelen the mathematicians, and the eccentric Duke of Brunswick. Dr. Robertson, in his "History of Charles V.," tells another anecdote to show that with some individuals the love of chess has been strong enough to counterbalance the fear of dying. John Frederick, Elector of Saxony, made prisoner at the battle of Muhlberg in 1547 by Charles V., was playing chess with his fellow-captive, Ernest of Brunswick, when he received the news of his condemnation to death. After a few remarks on the irregularity of the emperor's proceedings, he quietly continued his game. On winning it, he expressed his satisfaction, and then retired to prepare for his execution. He did not, however, suffer the death penalty, but was released after five years' imprisonment.

The annals of chess, though furnishing numerous more difficult and tedious problems, contain none more marvellous than the following:

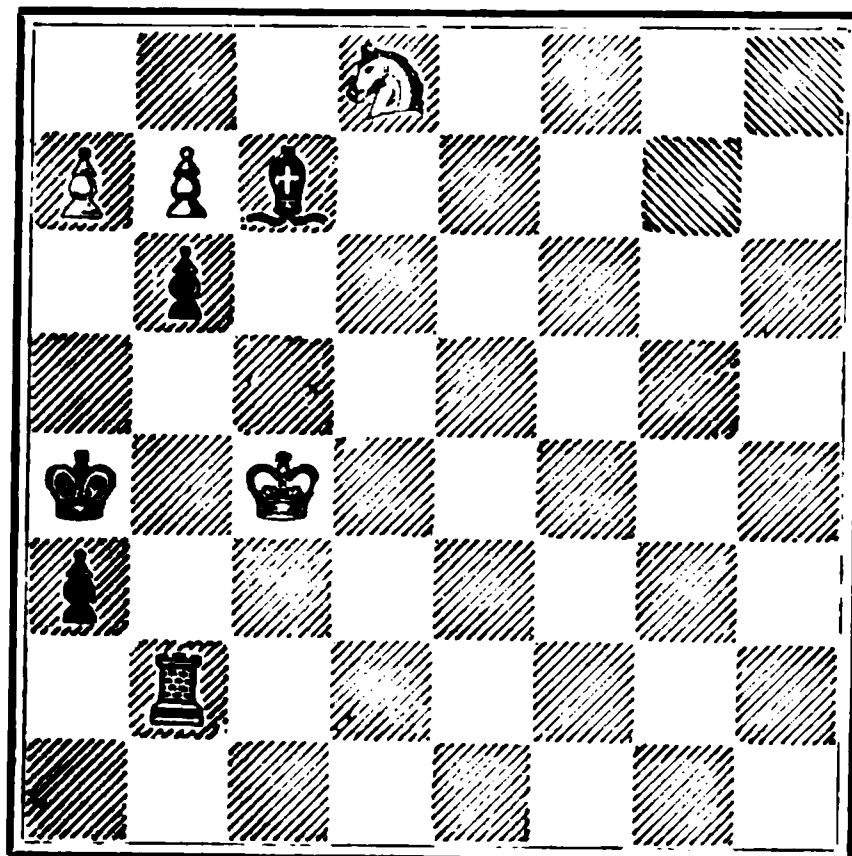
When Charles XII.\* was pursued by the victorious Russians after

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\* Among the virtues of this youthful monarch must be enumerated his aversion of gaming, which he carried so far that he even prohibited any man in his army from indulging in "game" of chance. Chess, however, was excepted, and the king took such a delight in it that he encouraged the study and practice of it among all his courtiers. His playing was peculiar in one respect, viz., that he moved the king more than any other piece, a conduct in which he finds few, if any, imitators, on account of the ruin involved upon all the pieces in case the king meets with a disaster.

his defeat at the memorable battle of Pultowa, he sought refuge on a small island in the Dniester, in the dominions of the Sultan. Here, near the town of Bender, surrounded by Swedes, Poles and Tartars sent by the Sultan, and by janizaries in his service, he established his camp; till the Turk, fearing longer to offend the Czar, peremptorily ordered the unfortunate king to leave. The latter, notwithstanding that he had but three hundred men at his command, refused, and resolved to remain and die. Meanwhile the enemy, thirty thousand strong, besieged him there, with now and then an occasional shot to warn him of his danger. His constant amusement while in camp was chess, and among his most familiar opponents were the gallant Poniatowski and the brilliant Swede, Christian Grothusen. The Swedish historian Pryxell has recorded his contests with the latter, while the writings of Voltaire tell us of his combats with the former. It was in January, 1713,—not a month before his final capture and transport to Adrianople. The king and his General Grothusen were just at the close of a long and exciting contest, when Charles announced, "Mate in three moves." The position was as follows: White king on king's bishop's fifth, white rook on king's knight's seventh, white knight on the king's square, and white pawns on king's knight's second and king's rook's second; black king on king's rook's fourth, bishop on king's bishop's seventh, and pawns on king's rook's third and on king's knight's sixth. Thus:

WHITE (Charles XII).



BLACK (General Grothusen).

The words were no sooner uttered than a stray bullet, shattering a window-pane, hurled the white knight from the board, but ere his dismayed opponent could replace the piece Charles coolly smiled and said: "I do not need the knight," and declared mate in four moves. At this second announcement a second bullet removed the white rook's pawn. The monarch, with his accustomed composure, remarked to his opponent: "You have our good friends, the Turks, on your side; I can scarcely contend against thirty thousand heathen—this is the first time I have seen chess played with muskets. But wait," he added, "I think I can spare this unlucky pawn also," and informed the general that there was a "mate in five moves"! Those who belong to the school of Caissa can now produce their boards and endeavor to solve this problem.

Don John of Austria is said to have had a chamber in his palace the floor of which was paved with black and white marble like a chess-board, and upon this living men moved under his direction, according to the laws of the game. A duke of Weimar is also recorded to have possessed a similar apartment and utilized his soldiers for chess-men. In 1792, Hunter, in describing the palace of Akbar at Delhi, says that the pavement of one of the courts was "marked out in squares in the manner of the cloth used by the Indians for playing the game called pachess. Here Akbar used to play at the game, the pieces being represented by real persons. On the side of the court is a little square apart, in the center of which stands a pillar supporting a circular chair of stone, at the height of one story. Here the emperor used to sit to direct his moves."

And now, kind reader, our task is done, and our hope is that those who are not yet initiated into the mysteries and wonderful positions of this delightful recreation will be induced to penetrate them. We have only to add that in our rambles among chess-lore we have discovered the subjoined old quotation, and should be thankful to be informed of the authorship of the same:

#### THE DIVERSITIE OF MATES.

"The Queen's mate, a gracious mate.  
 The Bishop's Mate, a gentle mate.  
 The Knight's Mate, a gallant mate.  
 The Rooke's Mate, a forcible mate.  
 The Pawn's Mate, a disgraceful mate.  
 The Mate by discovery, the most industrious mate of all.  
 The Mate in a corner of the field, Alexander's mate.  
 The Mate in the midst of the field, an unfortunate mate.  
 The Mate on the side of the field, a coward's mate.  
 The Blind Mate, a shameful mate.  
 The Stole Mate, a dishonorable mate.  
 The Mate at two Draughtes, a fool's mate.

CAXTON.

*Dr. Edward Jenner.*

Dr. Edward Jenner, the author of this charming poem on weather signs, was born in Gloucestershire, England, May 17, 1749, and passed most of his life in Berkeley, as a regular medical practitioner. He was the discoverer of vaccination, as a preventive of small-pox, and after much opposition and great obloquy from the medical fraternity, lived to see his system triumph, and adopted in every part of the globe. Oxford University presented him with a diploma, the Royal Society admitted him to membership, and Parliament voted to him a gratuity of £20,000.

Besides the authorship of several medical works bearing on his great discovery, Dr. Jenner wrote much on Natural History, a subject of which he was very fond.

His poems exhibit the life and spirit of true genius, a close observation of nature and a weird and unique style of expression that remind one of the short fragmentary poems of Shakespeare.

He died January 26, 1823, and the poem given below, had a great circulation for a few years subsequent to his death, both in this country and England. It is copied from Leavitt's Farmers' Almanac for the year 1826.

W. H. H.

*SIGNS OF RAIN.*

*An excuse for not accepting the invitation of a friend to make an excursion with him.*

*An Original Poem, by the late Dr. Jenner.*

1. The hollow winds begin to blow,
2. The clouds look black, the grass is low ;
3. The soot falls down, the spaniels sleep,
4. And spiders from their cobwebs peep.
5. Last night the sun went pale to bed,
6. The moon in halos hid her head ;
7. The boding shepherd heaves a sigh,
8. For, see, a rainbow spans the sky.
9. The walls are damp, the ditches smell,
10. Clos'd is the pink-eyed pumpernell.
11. Hark ! how the chairs and tables crack,
12. Old Betty's joints are on the rack ;
13. Loud quack the ducks, and peacocks cry ;
14. The distant hills are looking nigh.
15. How restless are the snorting swine,
16. The busy flies disturb the kine.

17. Low o'er the grass the swallow wings;
  18. The cricket, too, how sharp he sings;
  19. Puss on the hearth with velvet paws,
  20. Sits, wiping o'er her whiskered jaws.
  21. Through the clear stream the fishes rise,
  22. And nimbly catch the incautious flies;
  23. The glow-worms, numerous and bright,
  24. Illum'd the dewey dell last night.
  25. At dusk the squalid toad was seen,
  26. Hopping and crawling o'er the green;
  27. The whirling wind the dust obeys,
  28. And in the rapid eddy plays;
  29. The frog has changed his yellow vest,
  30. And in a russet coat is drest.
  31. Through June the air is cold and still;
  32. The mellow blackbird's voice is shrill.
  33. My dog, so altered in his taste,
  34. Quits mutton-bones, on grass to feast;
  35. And see yon rooks, how odd their flight,
  36. They imitate the gliding kite,
  37. And seem precipitate to fall—
  38. As if they felt the piercing ball,
  39. 'Twill surely rain, I see with sorrow;
  40. Our jaunt must be put off to to-morrow.
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ANNUAL MOURNING OF HASSAN AND HOSSEIN. (Vol. IV. p. 251.)

It is related that Hassan and Hossein, Mohammed's grandchildren, on a certain time being both sick, the prophet, among others, visited them, and they wished Ali to make some vow to God for the recovery of his sons; whereupon Ali and Fatema, and Fidda, their maid-servant, vowed a fast of three days in case they did well; as it happened they did. This vow was performed with so great strictness, that the first day, having no provisions in the house, Ali was obliged to borrow three measures of barley of one Simeon, a Jew, of Khaibar, one measure of which Fatema ground the same day, and baked five cakes of the meal, and they were set before them to break their fast with after sunset; but a poor man coming to them, they gave all their bread to him, and passed the night without tasting anything except water. The next day Fatema made another measure into bread, for the same purpose; but an orphan begging some food, they chose to let him have it, and passed that night as the first; and the third day they likewise gave their whole provision to a famished captive. Upon this occasion Gabriel descended with a chapter in the Koran, and told Mohammed that God congratulated him on the virtues of his family.

## QUESTIONS AND ANSWERS.

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**RAMBAM.** (Vol. V. p. 163.) Moses Maimonides (i. e. son of Maimon,) also called by the Jews Rambam, from the initial letters, R. MOSES b.-MAIMUM and by the Arabians Abu Amran Musa b.-Maimun Obeid Allah, son of the greatest of the Jews since the exile—the great luminary, the glory of Israel, the second Moses, the reformer of Judaism, as he is called, was born at Cordova, March 30, 1135. As a youth, he received his instruction in the Hebrew Scriptures, the Talmud, and Jewish literature, from his father, R. Maimon, who held the dignity of judge of the Jews, as also his forefathers had held it for some centuries previous, and was himself renowned as a scholar and author of a commentary on Esther, a work on the laws of the Jewish prayers and festivals, a commentary on the Talmud.

**THE CRESCENT SYMBOL OF THE MOHAMMEDANS.** (Vol. V. 163.) The crescent is the symbol of the Mohammedans, but it has nothing to do with their peculiar religious opinions. It was the ancient symbol of Byzantium, now Constantinople, and is found on ancient coins of that city, with the legend, "Saviour of Byzantium." When Philip of Macedon besieged Byzantium, and was going to storm it in a cloudy night, the moon shone out, and discovered his approach, so that the inhabitants observed and repulsed him. This story is told by three ancient writers,—Stephanus of Byzantium, Eustathius, and Hesychius Milesius. In consequence of this deliverance, the Byzantines erected a statue to Hecate, before which a lamp was continually kept burning. The Turks, on entering Constantinople when it was overthrown by Mohammed II., found this ancient badge of the crescent in many places, and suspecting some magical power in it, assumed the symbol to themselves, so that the crescent is now their bearing.

**PATER NOSTER.** (Vol. V, p. 163.) The name Pater Noster was given to one of the great thoroughfares of London on account of the many prayer-books sold in that street.

**POEM ON INDIA.** (Vol. V, p. 163.) Rev. Mr. Grey's poem on India was published in *The Zodiac*, a periodical issued in Albany, N. Y., in 1835-36. It is divided into two parts. Book I. consists of 88 verses, and Book II, 127 verses, of nine lines each. It is descriptive and full of life, portraying the religion, traditions, customs, manners, &c., of that ancient country.

**TRADITION ON SNEEZING.** (Vol. V, p. 163.) S. Baring-Gould's work "Legends of the Patriarchs and Prophets," p. 227, says: Custom of saying "God bless you!" when a person sneezes, dates from Jacob. The Rabbis say that, before the time that Jacob lived, men sneezed once, and that was the end of them—the shock slew them; but the patriarch, by his intercession, obtained a relaxation of this law, subject to the condition that, in all nations, a sneeze should be consecrated by a sacred aspiration.

**WAR OF 1812-14.** (Vol. V. p. 145.) The author's name of the pamphlet, asked for by M<sup>r</sup> O. Waggoner, is Joseph Penley. He resided in Paris, Oxford county, Maine. I was personally acquainted with him and bought one of his pamphlets of him personally. Several of his sons are now living near me. He has been dead several years.

CALCHAS, Bryant's Pond, Me.

**GREAT EATER.** (Vol. V, p. 163.) This is Albinus, one of those who contended with Severus for the Roman empire. He is described as being like a leopard; this indicates a variegated character; and such was that of Albinus, of whom it is said that, notwithstanding his many vices, he was a man of great courage and skill in military affairs, and commonly called a second Cataline. The feet of a bear indicate a rude and brutal character; and it is said of Albinus, that he was stern, reserved, morose, and rigid to cruelty. The mouth of a lion may indicate a voracious appetite; and it is said of Albinus, that he would eat a breakfast 500 figs, 100 peaches, 10 melons, 20 bunches of grapes, 100 small birds, and 400 oysters.

**POTTER CHRIST.** (Vol. V, p. 163.) Potter Christ was a man who preached near Council Bluffs, Ia., in 1870, and claimed to be the "Messenger of the New Covenant," as prophesied in Malachi III, 1. He published a work entitled, "Revelations, given by inspiration of God for the Salvation of the Whole World." The titles he claimed for himself are: The Deliverer, Rom. XI, 26; Everlasting Father, Isaiah IX, 6; The Lord's Anointed, Psalm, II, 2; Ancient of Days, Dan. VII, 7, 13, 22; Second Adam, The Lord from Heaven, 1 Cor. XV. 45; Shiloh, Genesis XLIX, 10; Michael Your Prince, Daniel XII, 1; verse; Root and Offspring of David—Morning Star, Rev. XXII, 16; The Rod out of the Stem of Jesse, Isaiah XI, 1.

SIC VOS NON VOBIS. (Vol. V, p. 163.) The origin of the phrase is this: Virgil wrote a distich in praise of Cæsar, which was claimed by a poet named Bathyllus; Virgil, angry, wrote beneath the distich the lines:

*"Hos ego versiculos feci, tulit alter honores ;*  
*Sic vos non vobis*———  
*Sic vos non vobis*———  
*Sic vos non vobis*———  
*Sic vos non vobis*———

Cæsar asked Bathyllus if he could finish the lines, but he couldn't. Virgil then stepped up, and said he could. So he finished them thus:

———*fertis aratra boves ;*  
 ———*mellificatis apes ;*  
 ———*vellera fortis oves ;*  
 ———*nidificatis aves.*

The translation of the five lines is: "These lines made I, another steals my honors; so you for others, oxen, bear the yoke; so you for others, bees, store up your honey; so you for others, sheep, put on your fleece; so you for others, birds, construct your nests."

HANSEATIC LEAGUE. (Vol. V, p. 96.) The Hanseatic League was a commercial association formed in 1239, by the people of Western Europe, to protect themselves against the banditti of the east. Some of their chief posts, formerly called Hanses, still remain as free cities; namely, Hamburg, Bremen and Lubec.

H. RITTERHOFF, New York City.

DID JESUS EVER LAUGH? (Vol. V, p. 78.) McClintock & Strong's Cyclopædia, Vol. IV. p. 884, says: According to the text of Gabler (in Latin) it reads as follows: "A man of tall stature, good appearance, and a venerable countenance, such as to inspire beholders both with love and awe. His hair, worn in a circular form and curled, rather dark and shining, flowing over the shoulders, and parted in the middle of the head, after the style of the Nazarenes. His forehead, smooth and perfectly serene, with a face free from wrinkle or spot, and beautiful with a moderate ruddiness, and a faultless nose and mouth. His beard full, of an auburn color like his hair, not long, but parted. His eyes quick and clear. His aspect terrible in rebuke, placid and amiable in admonition, cheerful without losing gravity; a person never seen to laugh, but often to weep."



## QUESTIONS.

1. What was the "Quinquarticular Controversy" in England regarding some points of religious doctrines, some 300 years ago?

HERBERT.

2. Did the origin of the "Zodiacal Man" have any connection with the historical Judas Iscariot of whom it is related by Luke that "all his bowels gushed out."—*Acts* I, 18.

JACOB.

3. "Be not deceived; evil communications corrupt good manners."—*I Corinthians* xv, 33. Burritt's "Geography of the Heavens," p. 98, says Paul quotes this from the *Thais* of Menander. In D. Appleton & Co.'s edition of the "Poetical Works of John Milton," 1868, p. 359, it is stated that Paul quotes this from Euripides. Whis is correct? Give the reference—

LOIS PHILLIPS.

4. Who is the author of, and where found, the following, quoted from memory: "Some write their deeds in marble; He the Just, stooped down and wrote theirs in the dust."

ANDREW.

5. What was the so-called "Battle of the Chains?"

D. M. DRURY.

6. What was the so-called day of the Camel?

D. M. DRURY.

7. Is it possible that a decimal can ever be a repetend, even if the decimal should be extended to  $n$  places, provided the decimal is derived from a series? For example, could the value of  $\pi$ , or  $e$ , ever become a repeating decimal?

A TYRO.

8. What were the five keys of secret knowledge among the Mohammedans?

J. P. SHIELDS.

9. Who were the *genii* employed by Solomon in the construction of his Temple?

M. M.

10. What and where is Banbury Cross?

D. B. TOWNSEND.

11. Who wrote the ballad of "Wild Darrell," and where can it be found?

D. B. T.

12. What is the drama on which "Erminie" is founded, and what is the history of that drama?

D. B. T.

13. Whence the phrase "carrying coal to Newcastle?"

D. B. T.

14. Will some one give the names of the Twelve Apostles as they are represented in the painting of the Last Supper by Leonardo de Vinci; commencing at the left.

ADMIRER.

15. Who was "King Lemuel" mentioned in Proverbs xxxi, 1?

JONATHAN.

16. A theological writer quotes from the Bible this: "The apocalypse of the apocrypha." Where is it found?

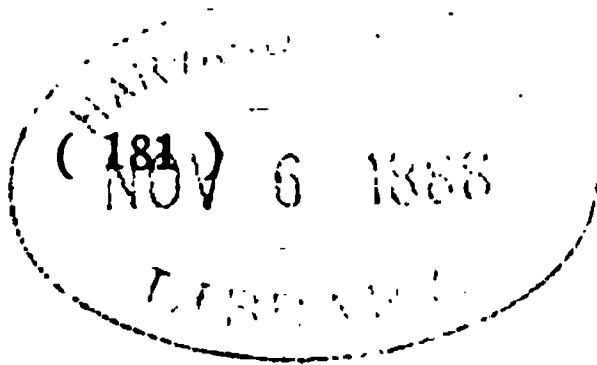
SEARCHER.











MISCELLANEOUS

NOTES AND QUERIES,

WITH ANSWERS.

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VOL. V.

NOVEMBER, 1888.

No. 11.

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*"There is a nearer way to Heaven than Homer's chain."*—THOS. BROWNE.

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*The Religious Card-Player.*

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A soldier, by the name of Richard Lee, was taken before the Mayor of Glasgow for playing cards during divine service. The account of it is thus given in an English journal :

Sergeant commanded the soldiers at the church, and when the parson had read the prayers he took the text. Those who had a Bible took it out, but this soldier had neither Bible nor prayer book, but pulling out a pack of cards he spread them out before him. He looked first at one card and then at another. The sergeant saw him and said :

"Richard, put up the cards ; this is no place for them. "

"Never mind that," said Richard.

When the service was over the constable took the soldier a prisoner and brought him before the mayor.

"Well, what have you brought the soldier here for ? " said the Mayor.

"For playing cards in church. "

"Well, soldier, what have you to say for yourself? "

"Much, sir, I hope."

"Very good ; if not, I will punish you more than ever man was punished. "

"I have been," said the soldier, "about six weeks on the march. I have no Bible or prayer-book ; I have nothing but a pack of cards ; and I hope to satisfy your honor of the purity of my intentions. "

Then, spreading the cards before the mayor, he began with the ace.

"When I see the ace it reminds me there is but one God. When I see the deuce it reminds me of Father and Son. When I see the tray

it reminds me of Father, son and Holy Ghost. When I see the four it reminds me of the four evangelists that preached—Matthew, Mark, Luke and John. When I see the five it reminds me of the five wise virgins that trimmed the lamps. There were ten, but five were wise and five were foolish and were shut out. When I see the six it reminds me that in six days the Lord made heaven and earth. When I see the seven it reminds me that on the seventh day God rested from the great work which He had made and hallowed it. When I see the eight it reminds me of the eight righteous persons that were saved when God destroyed the world, viz., Noah and his wife, their three sons and their wives. When I see the nine it reminds me of the nine lepers that were cleansed by Christ, and nine out of ten never returned again to give thanks. When I see the ten it reminds me of the Ten Commandments which God handed down to Moses on tables of stone. When I see the king it reminds me of the great King of Heaven, which is God Almighty. When I see the queen it reminds me of the Queen of Sheba who visited Solomon, for she was as wise a woman as he was man. She brought with her fifty boys and fifty girls, all dressed in boys' apparel, for King Solomon to tell which were boys and which were girls. King Solomon sent for water for them to wash; the girls washed to the elbows and the boys to the wrists, so he told by that."

"Well, said the mayor, "you have given a description of all cards in the pack except the knave."

"I will give your honor a description of that, too, if you will not be angry."

"I will not," said the mayor, "if you do not term me to be the knave."

"Well," said the soldier, "the greatest knave I know of is the constable that brought me here."

"I don't know," said the mayor, "if he is the greatest knave, but I know he is the greatest fool."

"When I count how many spots in the pack of cards I find 365—as many as there are days in the year. When I count the number of cards in a pack I find there are 52—the number of weeks in a year; and I find four suits—the number of weeks in a month. I find there are twelve picture cards in a pack, representing the number of months in a year; and, on counting the number of tricks, I find thirteen, the number of weeks in a quarter. So you see, sir, a pack of cards serves for a Bible, almanac and prayer book."

**THE LAST SUPPER.** (Vol. V, p. 180.) The order of the twelve apostles, commencing at the left, as given on our copy of the painting of the last supper, by de Vinci, is as follows: James, Philip, Andrew, Judas Iscariot, Simon, John, (Christ), Bartholemew, Peter, James the less, Matthew, Thomas, Jude.

**GAELIC PROVERBS.** Meal is finer than grain, women are finer than men. There was never good or ill but women had to do with it. Modesty is the beauty of women. I like not pullets becoming cocks. Take no woman for a wife in whom you cannot find a flaw. Choose your wife as you wish your children to be. Take a bird from a clean nest. Choose the good mother's daughter, were the devil her father. If you take a wife from hell, she'll bring you home there. When you see a well-bred woman, catch her, catch her; if you don't do it, another will match her. Their own will to all men, all their will to women. What a woman knows not she'll conceal. Harsh is the praise that cannot be listened to; dark are the dames that cannot be dallied with. Where a cow is, a woman will be; where a woman is, temptation will be (attributed to St. Columbia.) A man's wife is his blessing or bane. If you wish to be praised, die; if your wish to be decried, marry. You are too merry, you ought to marry. Who speaks ill of his wife dishonors himself. True or false, it will injure a woman. Warm is the mother's breath.—*A. Nicholson.*

We naturally expect to find a strong flavor of the sea derived from the Hebrides and the adjacent shores of the mainland, and the proverbs which come to us from this source are among the most racy and original of all. "No wind ever blew that did not fill some sail," is an "ill wind that blows nobody good." Making needless difficulties is happily described as "Making a great ocean of a narrow strait." For a man who piques himself on being always wiser than his neighbors, it is said: "He knows where the whales breed." For one who seems fated never to be in luck: "When the herring is in the north, Red Malcolm is in the south." Here is a brave and cheery utterance, peculiarly suggestive of the narrow seas, where the tide is a power not to be lightly set at nought: "None ever got tide with him that did not get it against him." Nor is the wind forgotten: "I shall go tomorrow said the King. You shall wait for me, said the wind." What a world of suggestive tenderness and pathos lies in the following: "There is hope of a man at sea, but none of the man in the church-yard!" To these may be added the following graphic little story. The small Hebridean islands of Elva and Gometra are divided by a narrow channel, which is passable at low water. On one occasion, when the minister, who had gone over to Gometra to preach—intending afterward to return to Mull,—was in the midst of his sermon, he was summarily interrupted by the Beadle with the warning: "Get on, Master John—the channel is filling!"—*Chamber's Journal.*



**FORETELLERS OF STORMS.** The saw-like note of the great titmouse is said to foretell rain ; that of the blue tit, cold.

Various proverbs would seem to indicate that the cry of the owl, if heard in bad weather, foretells a change.

Hérons, says an old author, flying up and down in the evening as if doubtful where to rest, "presage some evil-approaching weather"—a legend as old as Virgil.

In Germany dwellers in the country lack faith in the skylark as announcing fine weather, but when the lark and the cookoo sing together they know summer has come.

In Hampshire swans are believed to be hatched in thunderstorms, and it is said that those on the Thames have an instinctive prescience of floods. Before heavy rains they raise their nests.

In the south of France so much store is set by the wisdom of the magpie, that if it builds its nest on a summit of a tree the country folk expect a season of calm, but if lower down, winds and tempests are sure to follow.

The abhorrence in which mariners hold the swallow like storm petrel is well known. Its appearance is believed to denote wild weather. This little bird is the Mother Carey's chicken of sailors, and is also called storm finch and water witch.

Concerning gulls in general children who live by the sea say: "Seagull, seagull, sit on the sand ; it's never good weather while you'r on the land ;" and fisher folk know that when the seamews fly out early and far to seaward, fair weather may be expected.

When rocks fly high and seem to imitate birds of prey by soaring, swooping and falling, it is almost a certain sign of coming storm. Staying in the vicinity of the rockery, returning at midday or coming to roost in groupes are also said to be omens to the like effect.

The constant iteration of the green woodpecker's cry before the storm has given it the names of rain-bird, rain-pie and rain-fowl. Stormcock is a provincial name shared by this bird and the missel thrush, the latter often singing through gales of wind and rain. Storm bird is also applied to the fieldfare.

To Scotch shepherds the drumming of the snipe indicates dry weather and frost at night, and Gilbert White remarks that woodcocks have been observed to be remarkably listless against snowy, foul, weather, while, according to another author, their early arrival and continued abode "foretells a liberal harvest."—*Chicago News*.

"THE ORDER OF THE SACRED HEART." What are the prime principles of this recently promulgated order?  
DAMON.

As yet this order has no rules, no initiation fees, no formal or ceremonial initiations. Its rules are entire freedom, for it will have no members who cannot be trusted as we trust God. Its initiation fees are the voluntary service of each one to the same beneficent ends. Its initiations are the sacred and private ones that must come to each before he or she will ever dream of entering upon service. Whoever does freely give in allegiance to its immense and world-wide purposes, by so doing virtually says: With all my powers of body, mind and soul, with all my senses on the alert, I give my individual assurance:

1. I affirm that what is known as the "fall of man" was a fall into physical generation, resulting in the separation of an other wise perfect being into two perfect halves, and the solidification of the human form, rendering it subject to pain and death, and the necessity of repeated physical births, lives and deaths.

2. I affirm that the antagonisms of nature; the strife and turmoil of the animal creation; the difficulty with which nature yields her increase; the great catastrophes that afflict her and involve us in them, are the result of the antagonistic forces generated in our loves and lives, together with the presence here of invisible beings, whose wills are utterly perverse and rebellious against the divine order.

3. I affirm that these beings, of whom I have spoken, are kept alive by the awful waste of our life forces, caused by an over-stimulation of the intellectual and physical centers of activity—the brain and the sex forces—both of which are self-destructive, because though failing to hold them subject to the true heart center, we are constantly dissipating our soul substance.

4. I affirm that a great conflict is being fought between these powerful beings and equally powerful good ones, variously called angels; guardian spirits; sons of God; Mahatmas; teachers; inspirers; who cannot fight the battle for us, but can help us when by our method of life we so conserve the forces of being, that through them they can co-operate with us, and we with them, by becoming in various ways sensible of their glorious companionship.

5. I affirm that the various manifestations we call Spiritualism, and in which we are all so deeply interested, about equally divided between these evil beings, who are still at their work of deception, and these God-like beings, who are working through these methods for our rescue and redemption.

6. I affirm that in all the life and death of Jesus, the great renunciation of Buddha, and in all the sacred writings of the world, we have pictured for us these great truths, teaching us the way back to the Lost Paradise.

CHINESE PROVERBS. New milk is not got from a statue.  
Ambition is like hunting for fleas.  
An emperor may have the measles.  
The hasty man drinks his tea with a fork.  
A little scandal is to tea what an olive is to wine.  
A wise man at court is like a mermaid in a ball-room.  
Shave with a file if you like, but don't blame the razor.  
A disobedient son is a bad bull tied to his father's pig-tail.  
Teaching a woman scandal is like teaching a kettle to boil.  
Be not too prodigal ; the kettle when too full puts out the fire.  
Carrying a peacock on your head does not make you a nobleman.  
If the golden key won't open a woman's heart try brass.  
A comet can be caught any time by putting a little salt on his tail.  
He who marries an angry woman must sleep in a bed of fireworks.  
Never do anything hastily; remember, it is the last cup of tea that is the strongest.  
Looking into the future is like giving a blind man a pair of spectacles to see through a mill-stone.

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THE ORIGIN OF THINGS. The first daily, *Frankfort Gazette*, in 1615.

The phonograph was invented by T. A. Edison, 1877.

Theophrastus mentioned amber in his writings 300 B. C.

The most authentic newspaper was published in 1494.

The first bank was established by Lombard Jews, in Italy, A. D. 808.

Aurelian was the first Roman emperor who wore a diamond, A. D. 273.

Photographs were first produced in England in 1802 ; perfected in 1841.

The first daily paper in the United States, *The Pennsylvania Packet*, in 1784.

Gutta percha was first used as a coating for telegraph wires, in Brooklyn, in 1848.

The first daily paper continuously printed in America, *The Boston News Letter*, in 1702.

The first academy for girls only was the Adams academy at Derry, N. H., incorporated in 1823.

*Famous Earthquakes.*

Year.	Place.	Persons Killed.	Year.	Place.	Persons Killed.
1137,	Sicily,	15,000.	1859,	Syria,	20,000.
1159,	Syria,	20,000.	1784,	Ezing, Asia Minor,	5,000.
1268,	Cilicia,	60,000.	1897,	Country between Santa Fe	
1456,	Naples,	40,000.		and Panama,	40,000.
1533,	Lisbon,	30,000.	1805,	Naples,	6,000.
1626,	Naples,	70,000.	1822,	Aleppo,	50,000.
1667,	Schmaki,	80,000.	1829,	Murcia,	6,000.
1692,	Jamaica,	3,000.	1830,	Canton,	6,000.
1693,	Sicily,	100,000.	1842,	Cape Hatien,	4,000.
1703,	Avuila, Italy,	5,000.	1857,	Calabria,	10,000.
1703,	Yeddo, Japan,	200,000.	1859,	Quito,	5,000.
1706,	The Abruzzi,	15,000.	1860,	Mendoza, South America,	
1716,	Algiers,	20,000.			7,000.
1726,	Palmio,	6,000.	1868,	Towns in Peru and Ecuador,	25,000.
1731,	Pekin,	100,000.	1875,	San Jose de Cucuta, Col.	
1746,	Lima and Callao,	18,000.		umbia,	14,000.
1754,	Grand Cario,	40,000.	1881,	Scio,	4,000.
1755,	Kashan, Persia,	40,000.	1880,	Charleston,	96.
1755,	Lisbon,	50,000.			

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THE CALLIOPE. It was on the nation's Independence Day in 1856, that the calliope made its debut at Worcester, Mass. Its inventor, Joshua C. Stoddard, had toiled for over a year in the machine shop of Wood & Light, and, with admirable patience, had succeeded in reducing the harsh tones of escaping steam through the bell whistle to trained musical notes, and at night, not only the city, but the country for miles around was serenaded. On a special railway trip to Providence, great crowds rushed to hear the new instrument, and Mr. Stoddard was loaded with honors. The press described it as a "gigantic novelty," and "blowing a hurricane of music." At a distance of two miles, N. P. Willis, the poet, wrote to the *Home Journal*, "The tones were soft and musical, but yet as distinct and powerful as though they had been produced close by. They seemed to prevade the whole atmosphere. I stood in astonishment, and watched and listened." This was on the Hudson river. The rare instrument has since been heard on numerous great rivers, in traveling shows, at fairs exhibitions, etc., world over. On the car of fire and iron, the calliope is the voice of the "metallic devil" tamed and singing sweetly at the lucid intervals of his madness, singing the *hallel* of a royal car ere long to descend from the skies.

*Questions and Answers.*

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**ACHILLES' SHIELD.** Will you give us a literal rendering of Homer's description of Achilles' Shield? JONATHAN.

First of all, Hephæstus (Vulcan) made a shield large and strong, ornamenting it in every part; and around it he threw a bright rim, triple, and glittering; and he fitted to it a silver handle. Five were the thicknesses of the shield, in which he made many ornaments with cunning skill.

In it he made earth, and heaven, and sea; and the never wearied sun, and the full moon; in it he made also every constellation with which heaven is decked—the Pleiades, the Hyades, and the strength of Orion; and the Bear, to which some give the Wain also, which revolves around the pole and looks toward Orion, and alone of the constellations dips not in the waters of ocean.

And in the shield he made two beautiful cities, in one were marriages and feasting; and they were leading brides from their chambers by the light of torches through the city, and loud the nuptial song arose. And dancing youths were moving quick, and pipes and lutes kept up music for them; and the women stood and admired, each at her house door.

[In another part] the people assembled in a public place; and there a dispute had begun; two men were disputing about the fine of another man who had been murdered. One man said that he had paid the whole fine, addressing himself to the people; and the other said that he had received nothing at all. And both were eager to have the matter decided by witnesses (or judges). The people shouted aloud as they favored either party; but the officers kept the people in check, and the old men (the judges) took their seat on benches of polished stone, forming a hollowed circle. In their hands they held wands, such as belong to loud-tongued criers; with these they waved for silence, and each in turn gave his opinion. And there lay before two talents of gold, to be given to him who should pass the most just judgment.

But around the other city were lying two armies, glittering in their armour; and they were divided in opinion, whether they should plunder the city, or consent to depart on receiving half of the citizens' goods. But the besiegers were not induced to come to terms, but armed themselves to lie in ambush. The walls were defended by the women and the young children who took their station there, and next to them stood the old men. The army advanced, and Ares (Mars) and Pallas Athene led them, both represented in gold, and clothed in golden garments, beauteous and tall as gods should be, and both of them conspicuous; but the people were smaller. And when they came

to a fit place for ambush, by the bank of a river, where all the cattle were watered, they sat down cased in their glittering armour of brass. Two scouts took their station at a distance, and waited to look out for the sheep and herds with bending horns. And they soon came on, with two keepers following, who were playing on their pipes, without suspecting any danger. The enemy, when they got sight of them, rushed on and separated the herds of oxen and the fine flocks of white sheep from their keepers, and killed the keepers themselves. But when the citizens heard a loud noise among the cattle, while they were seated in front of the public place, immediately on swift horses mounted they arrived at the spot; and there they fought a battle by the banks of the river, and pierced one another with their brazen-pointed spears. And among the crowd were strife, and tumult, and deadly fate holding one prisoner just wounded and another unwounded; a third who was dead, she was dragging by the feet in the turmoil. And her garment about her shoulders was stained with blood. These mingled in the battle like mortals, and fought; and dragged off the dead from either side.

And in it he made a soft fallow, a fertile arable land, spacious, thrice worked; and many ploughmen in it, driving their oxen, turned them this way and that. When the ploughmen after turning came to the end of the field, a man was ready to put in their hands a cup of honey-sweet wine; they accordingly turned their ploughs along the furrows, being eager to arrive at the end of the fertile field. And it (the field) grew black behind them, and was just like a ploughed field, though made in gold; this indeed was a marvelous piece of workmanship.

And in it he made a field with high standing corn, and reapers were cutting with sharp scythes in their hands; while some stalks were falling on the swathes, close after one another on the ground, the binders were fastening others up in sheaves. The sheaf-binders were three, and behind them children collecting the corn in bundles, and carrying it in their arms, continually supplied the sheaf-binders. Among them stood the lord in silence, on a swathe, with a staff in his hand, well pleased. In another part of the field servants were preparing a repast under a tree, and they were dressing a large ox which they had killed; while the women were preparing supper for the reapers, and were kneading much white meal.

And in it he made a vineyard, heavily laden with bunches of grapes, beautiful and of gold; and the grapes were black. The vines were all supported by silver props. Around the vineyard was a dark-looking ditch, and also a hedge made of tin; and a single path led to the vineyard, by which the gatherers used to go, when they plucked the grapes. Merry virgins and youths were carrying in wicker branches the honey-sweet fruit. And in the midst of them a boy was playing on his sweet lute, and was singing to it the song of Linus with his

soft voice; while the youths and virgins, striking the ground to the tune, with songs and shouts followed, nimbly moving their feet.

And in it he made a herd of oxen with upright horns; and the cattle were made of gold and tin; and with lowing they were moving from the stalls to the pastures, along a murmuring brook, by the rustling reeds. Keepers of gold were following the herd; four keepers, and nine swift dogs with them. Two horrid lions seized a bellowing bull foremost among the herd, and he dragged along roaring, while the dogs and the young men came quickly after him. The lions having torn the hide of the strong bull, were eating the entrails, and lapping his blood; but the keepers in vain followed and urged on the quick dogs; for they had kept aloof from biting the lions, but stood near and barked; yet all the while kept they out of the lions' way.

And in it skillful Vulcan made a peice of pasture, a large pasture for white sheep in a beautiful valley; he made both folds and huts for the shepherds, and pens with roofs.

And in it skilful Vulcan made a dance like that which Dædalus once made in spacious Gnossus for Ariadne with beautiful hair. There youths, and virgins too he bought with large dowries, were dancing, holding one another by the hand: the virgins were clothed in fine linen, and the youths in well-spun vests, smooth, and shining like oil. And the girls had beautiful chaplets on their heads, while the youths had golden knives fastened with silver chains. At one time they would move lightly with their feet (running in a circle), just as a potter who is seated tries the wheel well fitted to his hands, to see if it will run: at another time they would move in lines toward one another. And a large crowd delighted stood around the happy troop, two active dancers among them began the song, and moved quickly in the midst.

And in it he placed the great strength of Ocean, along the outer border of the well-made shield.

YGGDASIL. (Vol. V, p. 148.) Yggdasil is the great "World-Ash" of the ancient Skandinavians, *Fraser's Magazine* derives the name from Y-g-g-r, the Thinker, the Terrible—a name of Odin, and *draga*, to bear or carry. This makes the name mean a vehicle or ovator of Odin; and the tree is analogous to the Bo-tree and Banyan of India. It is the Tree of Life, of which every human being is a participant. To describe it, however, would require a treatise, and there are several works already that treat of it, among them, the *Prose Edda*, Mallet's "Northern Antiquities," Forlong's "Rivers of Life," etc. Rev. James Challen wrote a poem upon it.

A. WILDER, M. D.



**AN ANCIENT WORD.** (Vol. V, p. 148.) Emanuel Swedenborg spoke repeatedly of an Ancient church and a most Ancient church. The latter of these was in direct communication with the celestial beings, as he was himself in his illuminated seasons. The Ancient church was less exalted, and was the possessor of the "Ancient Word"—a divine revelation given for their benefit and instruction. In his work, the "Apocalypse Revealed," he says: "Seek for it in China, perchance it may be found in Great Tartary."

Every person must, and will, exercise his own judgment in regard to the illumination and character of Swedenborg. I do not dispute them ; but I have surmised that he was a member of secret orders of learned men who possessed in their arcana, ancient faiths and doctrines which formerly dominated in the oriental world, and were afterward proscribed by the Roman church. It is plausible that the Hebrew Scriptures were more or less formed from older records. We find such phrases as the "God of Heaven" (Ahurmazd), "God of Truth" (Asha-Vahia), also "angels" and "princes" or Yazatas and Amshashands. That there were ancient sacred Scriptures, the two Aryan collections, the Vedas and Avesta, conclusively show. There were also the Baskets of the Buddhists, and others now well known to exist.

Again, it is pretty generally believed among the learned that the earlier seats of the Aryans and other leading human races were in "Great Tartary," or somewhere in that region.

The Khatans, Akkads, Eurythæns, Drairdes, and others, also appear in Archaic monuments, and traditions appear to have originated them. Semitic and Aryan races seem to have been of late development. The Chinese in the East, the Skyths, and Aethiopes were from that source. These people had religious and social polity, and letters. The late tribes about, whom we have tried to construct history, were their offshoots, and derived their notions and customs from them. Whether, therefore, Swedenborg derived this arcana from intercourse with those having knowledge in these matters, and afterward wrote it out after his own style of allegory and correspondence, or whether angels spoke to him, and he was illuminated, it is very certain that what he said of an "Ancient Word" was borne out by facts, and that it is probably possessed by the intelligent classes in China. But who will know it when he finds it?

A. W.



Will you kindly inform me, through NOTES AND QUERIES, of any book or books on the subject of "Height or Growth of the Human Body," and oblige,  
C. F. PEASLEE, Boston, Mass.

The proportions of the human figure are said to be strictly mathematical. The whole figure is six times the length of the foot. Whether the form be slender or plump, the rule holds good; any deviation from it is a departure from the highest beauty of proportion. The Greeks made all their statues according to this rule. The face, from the highest point of the forehead, where the hair begins, to the chin, is one-tenth of the whole statue. The hand, from the wrist to the middle finger, is the same. From the top of the chest to the highest point in the forehead, is a seventh. If the length of the face, from the roots of the hair to the chin, be divided into three equal parts, the first division determines the place where the eyebrows meet, and the second, the place of the nostrils. The height from the feet to the top of the head, is the same distance from the extremity of the fingers when the arms are extended.

"BY THE ETERNAL." (Vol. V. p. 168.) South Carolina, named in honor of Charles II. of England, by whom the province was created in 1663. One of the thirteen original states. First permanent settlement made by English at Port Royal, 1670. Famous nullification troubles occurred 1832-33, led by J. C. Calhoun, and opposed vigorously by President Jackson, during which his famous expression "By the Eternal," was first used.

THEBES. (Vol. V, p. 148.) It is probable that the name *Thebes* (in Egypt) only means *the city*, in the same sense of metropolis or "town." Thus Rome was called *Urbs*, and time reckoned *anno Urbis condita*. Athens was *aster* and Tyre was *Kartha*.

Medina also signifies a dwelling-place—Daniel iv, 25-32, and v, 21. The Egyptian name is *ta*, the, and *ape*, city. A. W.

"BY THE ETERNAL. (Vol. V. p. 31.) President Jackson used to have the credit of using the phrase "By the Eternal" pretty often. When Nicholas Riddle refused to permit him to carry his civil-service policy to the extent of warning officers of the United States bank, he is said to have declared his purpose to crush the bank, sealing it by that characteristic "swear." A. WILDER.

**POLARIZATION OF LIGHT.** (Vol. V, p. 148.) “ENO” will find a good account of polarization of light in Brande’s *Encyclopædia*, *Art* “Polarization.” The polarization of light may be effected in various ways, but chiefly in the following: 1. By reflection at a proper angle from the surfaces of transparent media, as glass, water, &c. 2. By transmission through crystals possessing the property of double refraction. 3. By transmission through a sufficient number of transparent uncrystallized plates placed at proper angles. 4. By transmission through a number of other bodies imperfectly crystallized, as agate, mother of pearl, &c.

The polarization of light by reflection is only effected completely when the light falls on the reflecting surface at a particular angle; and it has been mentioned that, in the case of glass, the angle which the direction of the ray must make with the surface is about  $33^{\circ}$ , or the angle of incidence (the complement of the former) must be  $57^{\circ}$ , in round numbers. This angle is called the polarizing angle. It is different for different substances; but from an extensive series of experiments with a great number of different bodies, Sir David Brewster found the following remarkably simple and beautiful relation to subsist in all cases between the polarizing angle and the refractive power of the medium, viz.: “The tangent of the polarizing angle for any medium is the index of refraction belonging to that medium.”

**PALM, FOOT, CUBIT, &c.** (Vol. V. p. 148.) The *palm* was a measure of length, and, by the Romans, of about eight and one-half miles, as denoting the length of the hand.

The *foot* is named from that organ in a full-aged man, and appears to have been a measure employed by the ancient Egyptians.

The *cubit*, Latin *cubitus*, an elbow,—is a Roman measure of length, corresponding with the length from the elbow to the end of the middle finger.

*Rod and rood* are the same word, denoting a cross, or gallows,—also a pole. The use with measuring with a pole, led to the reckoning of  $16\frac{1}{2}$  feet to a perch or pole, and forty of these to a rood, cross, or square.

A *chain*, *chignar* or *cotera*, is a series of links. The Gunter’s chain is an arbitrary device for convenience in measuring.

*Fathom* is from the old Aryan root *fat*, to extend, and denotes the distance to which a good-sized man can stretch his arms.

**TWELVE DISCIPLES.** (Vol. V, p. 148.) It is not well to build too much upon accounts given in the *Acts of the Apostles*. The early Christian church did not recognize the book as genuine. It appears from *Acts* xviii, that Apollos, an Alexandrian Jew, instructing and teaching exactly the things about the Lord, came to Corinth and taught them, "Knowing only the baptism of John." The next paragraph states that Paul came to Ephesus and found some twelve disciples there, who were like Apollos, having received John's baptism, but gone no further. The apparent fact is that John was a brother or monk of the Essenian Fraternity, which had its schools in Alexandria, Arabia and Asia Minor. The baptism was a symbol of cleansing and beginning on a higher plane of thought and life. This is what the Greek word *Metanoia*, incorrectly translated *repentance*, really means. Essenism contemplated a living "while in, *above* the world." There were Essenians at Ephesus. In many respects they appear to have been Zoroasterian in sentiment, and had secret rites and doctrines.

Christianity as promulgated by Paul, was essentially different. The *Metanoia*, or repentance, is barely mentioned; baptism is slightly spoken of. His theme is "Jesus and the Resurrection"—a gospel which was emphatically his own. The "Twelve Disciples" at Ephesus, would seem therefore to have been men, like Apollos, thoroughly instructed in the earlier doctrine, but in no way familiar with the Pauline gospel. They were by far the larger number. A. WILDER.

**MACROCOSM.** (Vol. V, p. 163.) The Hexalpha, or double interlaced triangle was a symbol of the Macrocosm or larger-world creation. Occult students believe it signifies the powers of nature. It is known as Solomon's Seal and some believe it was used by that king as a potent talisman to control the Jinns and make them assist in the construction of the temple. The Hindüs venerate it as the sign of Vishnu and affirm the possession of equal might when equally handled. The symbol is often drawn with one triangle light, pointing upward, and one triangle dark, pointing downward. The Pentalpha or five-pointed star is the symbol of the Microcosm, or little world, or lesser creation, and this signifies man. Pythagoras applied these words as stated. The doctrine turns on the hermetic axiom—"What is below is like that which is above; and what is above is like that which is below."

**FIVE KEYS OF SECRET KNOWLEDGE.** (Vol. V, p. 180.) The five keys of secret knowledge as given in Sale's Koran, p. 309, are as follows: Five things are enumerated which are known to God alone, viz.: the time of the day of judgment; the time of rain; what is forming in the womb, as whether it be male or female, &c.; what shall happen on the morrow; and where any person shall die. These the Arabs, according to a tradition of their prophet, call *the five keys of secret knowledge*. The passage, it is said, was occasioned by al Har-eth Ebu Amru, who propounded questions of this nature to Mo-hammed.

**APOCALYPSE OF THE APOCRYPHA.** (Vol. V, p. 180.) This phrase is found in Romans xvi, 25. The common version reads: "The revelation of the mystery," the original Greek being *Apocalypse* of the *Apocrypha*. The former word is applied to the last book of the New Testament, and the later word to the uncanonical books at the end of the Old Testament.

**FRENCH QUOTATION.** (Vol. V, p. 148.) I am not over-strong on French, but guess that *Il, faut que j'y songe encore*, means, "I must dream about it again." A. W.

**WILL-O'-THE-WISP.** (Vol. V, p. 163.) I think I have seen the luminous appearance in moist ground, known as *ignis fatuus* or "Will-o'-the-Wisp." In these days when so much is known about spontaneous combustion, it can seem to be explained that some hydrous substance may be produced which will ignite spontaneously. A. W.

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**PROBABILITY OF MARRYING.** A table inserted in the *Assurance Magazine* exhibits results of a rather startling character. In the first two quinquennial periods, 20-25 and 25-30, the probability of a widower marrying in a year is three times as great as that of a bachelor; at 30, it is nearly four times as great; from 30 to 45, it five times as great, and it increases, until at 60 the chance of a widower marrying in a year is 11 times as great as that of the bachelor. It is curious to remark, from this table, how confirmed either class becomes in its condition of life—how little likely, after a few years, is a bachelor to break through his settled habits and solitary condition, and, on the other hand, how readily in proportion does a husband contract a second marriage who has been deprived prematurely of his first partner. After the age of thirty, the probability of a bachelor marrying in a year diminishes in a most rapid ratio. The probability at 35 is not much more than half that at 30, and nearly the same proportion exists between each quinquennial period afterwards.

THE BRAHAN SEER. (Vol. V, p. 163.) The Brahan seer was known as "Coinneach Odhar Fiosaiche," his real name being Kenneth Mackenzie, was born at Baile-na-Cille, in the Parish of Uig, on the Island of Lewis at the beginning of the 17th century. This Scottish seer's prophecies have been gathered and published by Alexander Mackenzie, and a third edition published at Inverness, in 1882. Some of his prophecies are here given, and it is stated that nearly all have come to pass:

The day will come when there will be a road through the hills of Ross-shire from sea to sea, and a bridge upon every stream.

That the clans will become so effeminate as to flee from their native country before an army of sheep.

That the day will come when the big sheep will overrun the country until they strike (meet) the northern sea.

The day will come when the hills of Ross will be strewn with ribbons.

The day will come when the old wife with the footless stocking (cailleach nam mogan) will drive the Lady of Clan Ranald from Nuntun house, in Benbecula.

The day will come, and it is not far off, when farm-steadings will be so few and far between, that the crow of the cock shall not be heard from the one steading to the other.

The time will come when whisky or dram shops will be so plentiful that one may be met with almost at the head of every plough furrow.

Policemen will become so numerous in every town that they may be met with at the corner of every street.

Traveling merchants [pedlars and hawkers] will be so plentiful that a person can scarcely walk a mile on the public highway without meeting one of them.

The day will come when a fox will rear a litter of cubs on the hearthstone of Castle Downie.

The day will come when a fox, white as snow, will be killed on the west coast of Sutherlandshire.

The day will come when a wild deer will be caught alive at Chanonry Point, in the Black Isle.

Many a long waste feannag (rig, once arable) will yet be seen between Uig of the Mountains and Ness of the Plains.

The day will come when the Lewsmen shall go forth with their hosts to battle, but they will be turned back by the jaw-bone of an animal smaller than an ass.

The day will come, however distant, when 'Cnoc na Rath' will be the center of the village.

The natural arch, or 'Clach throll,' near Storehead in Assynt, will fall with a crash so loud as to cause the laird of Leadmore's cattle, twenty miles away, to break their tethers.











MISCELLANEOUS

NOTES AND QUERIES,

WITH ANSWERS.

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*" Nothing is lost, but all transmutes and becomes."*—GIORDANO BRUNO.

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*Biblia Sacra Nova.*

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*First Principles.* Chap. I.—Time and space are *the* two great fundamental ideas, anyhow.

2. They are the latitude and longitude of all conceiving.
3. All things, • tangible and aerial, material and spiritual, are in time and space.

Chap. II.—Time and space much resemble each other.

2. Present looks like zero ; future like plus ; past like minus ; eternity like infinity.
3. Mathematics is the science of number.

Chap. III.—If three apples cost two cents, what will five marble cost ?

2. You cannot compare apples and marbles, my son.
3. But :—Two apples are to four apples as three marbles are to six marbles.
4. Because the *abstract ratios* two-fourths and three-sixths are equal.
5. Hence you may *represent* apples by marbles,
6. As you do forces by lines, although forces *are* not lines.
7. The abstract is a conception, distinct from the concrete. Always and everywhere the same.

*Higher Applications.* Chap. I.—A mathematical line is conceived as composed of consecutive points.

2. A length of time is conceived as composed of consecutive moments.
3. Moments are to time-lengths as points to lines.
4. Hence, I may represent moments by points, time-lengths by lines.
5. As you do every day on the face of your time-piece.

Chap. II.—Mankind is composed of individuals.

2. Individuals are to mankind as points to a line.

3. Hence, I may represent individuals by points, and mankind—on any one moment of time—by a line.

*Calisthenics.* Chap. I.—Several celebrated metaphysicians have said that matter did not exist.

2. Allow me to take them at their word for about fifteen minutes.

3. So long as my *mental impressions* are the same, it don't make any difference about the essence of the object.

4. An image seen in a mirror is a clear case of the *sense of sight* being deceived by an *immaterial form*.

Chap. II.—Ubiquity is no attribute of man.

2. Hence, the sum of any one individual being, on any one moment of time, must be represented by a point of space.

[ Chap. III.—Birth occurs on a moment of time.

2. Death occurs on a moment of time.

3. And the intervening moments compose a line of biography.

Chap. IV.—Again, suppose I were the happy possessor of a magic wand,

2. By whose flourish, at any moment, I could arrest all motion in the world, and change all material things into marble.

3. I might send my spirit to inspect, at leisure, the attitude of human affairs, from minute to aggregate, from atom to mass, from particular to universal.

4. Something as I may now examine a complicated machine that has been stopped, as a ten-cylinder Hoe printing press, for example.

5. Then I would set the thing to going again, and nobody would know the difference.

Chap. V.—The attitude of human affairs on any one moment of time will be represented by a line.

2. Hence history, which is universal biography, will be represented by a surface, in the process of generation.

3. But this surface will be a web.

4. To exhibit the plan in this web is to explain existence.

*Pyrotechnics.* Chap. I.—Man, they say, is a mixture of good and evil.

2. To meet this, let us suppose *two* surfaces in the process of generation.

3. The one, to present all desirable conception, quality, and action,—

4. And the other all undesirable.

Chap. II.—Let us modify and qualify.

2. Instead of the representative lines being straight, let them be concentric circles, in the process of enlargement from a center.

3. Something like wavelets from a stone thrown upon placid water, in still, shady hours of contemplation.

4. Next, instead of the generated surfaces being plane, and independent, let the enlarging circles be,—

5. The successive parallels of latitude, starting simultaneously from the opposite poles of a finite, immaterial sphere in space, and meeting in the equator.

Chap. III.—Let figure 1 represent a plain figure of the chromo trope, in process of evolution.

2. Imagine some poet laureate in the audience to exclaim, And such is life.

4. Let the same figure also represent a polar hemisphere in orthographic projection.

4. In figure 2 the sphere is seen from over the equator.

Chap. IV.—A mathematical point, which is mere position, or zero, is neither plus nor minus.

2. A state of purity and innocence, in nakedness and ignorance,—is neither good nor bad.

3. Hence the opposite poles of the sphere will represent the origin of the race.

4. The prominent points along the quadrant will represent intervals of light in the growth of civilization,—in the history of mankind.

5. The perpendicular and equator will represent the promised millennium.

*Net Results.* Chap. V. — Abstract and concrete, name and thing, principle and fact, subject and object, species and individual.

2. Masculine and feminine, ideal and real, eternal and temporal, infinite and finite, positive and negative,—macrocosm and microcosm,—co-incide.

3. Science and religion, philosophy and poetry, materialism and spiritualism—are one.

4. The Shakespearean drama, tragedy and comedy, is put upon the stage of earth; the Miltonian idea is expressed in the language of Eighteen hundred four score and eight, and going, going, gone.

5. Goethe's Faust is illuminated, and Robert Pollock's Course of Time is run.

6. Darwin is accounted for, used and thanked. The Bible is translated.

7. The Perpetual Suney is read to be unveiled.

**WOMEN AS ACTRESSES.** There seems no doubt that actresses did not perform on the stage till the Restoration, in the earliest years of which Pepys says for the first time he saw an actress upon the stage. Charles II. must have brought the usage from the continent, where women had long been employed instead of boys or youths in the representation of female characters. Tom Coryat, in his "Crudities on Travels," 1611, as Mr. Lee says, saw actresses performing on the stage at Venice. John Chamberlain, in a letter to Dudley Carleton, 1602, relates a hoax or swindle played upon the public by a person who proposed, at a high price of entrance, to exhibit actresses in a theater. Chamberlain ventures to think he had heard of actresses before in England. Mr. Lee says women did perform in masques which were played before royalty or among the aristocracy by persons of nobility. Henry VIII is mentioned in the "Chronicles" of Hall, 1512, as having introduced masques into England, and having taken a part in them himself. Edward III, however, is said to have given a precedent to the dramatic masque, which flourished during the sixteenth century in England. Masques are said to have been taken from Italy. Henry VIII, with a Spanish wife who participated in them, may, however, have been adopting the manners of Spain and Portugal. Instances of women acting in plays and of royal personages taking their parts in them are afforded in Portugal by Gil Vicente, who, in the beginning of the sixteenth century, wrote dramas in the Castilian language, which gave rise to the Spanish theater, and anticipated Lope de Vega and Shakespeare by nearly a century. It is related of him, "His plays were enacted at the court of King Emmanuel, and the first of them was performed in 1504. They had great success, which increased during the reign of Emmanuel's successor, John III, who often played a part in them. It appears that Gil Vicente acted himself in his dramas; and it is certain that his daughter Paula (lady of honor to a royal princess) was the first dramatic performer of her time in Portugal." Gil Vicente wrote *autos* or religious plays, comedies, tragi-comedies, and farces. Being the only dramatic author of his time, he gained a European reputation, and Erasmus learned Portuguese in order to read his works. It appears, therefore, that in 1602 the public were not averse to seeing actresses on the stage, as in their disappointment they wreaked vengeance on the furniture of the theater, breaking to pieces what was in it. This was different from what happened near 30 years afterward, in 1629, when, as Mr. Collier relates, a French company were not permitted by the public to perform because they had actresses to fill women's parts. This marks the progress of Puritanism.

**ORIGIN OF THE "BEGGAR'S OPERA."** At Schomberg House, Pall-mall, was first concocted the dramatic scheme of the "Beggar's Opera," as the first thought of writing such a gross and immoral dra-

ma originated with him. Swift, also, who was an ardent admirer of the poetic talents of Gay, delighted to quote his Devonshire pastorals, they being very characteristic of low, rustic life, and congenial to his taste ; for the pen of the Dean revelled in vulgarity. Under the influence of such notions, he proposed to Gay to bestow his thoughts upon the subject, which he felt assured would turn to good account, namely, that of writing a work to be entitled " A Newgate Pastoral ;" adding " and I will, *sub rosa*, afford you my best assistance." This scheme, was talked over at Queensbury House, and Gay commenced it ; but it was soon dropped, with something of disgust. It was ultimately determined that he should commence upon the " Beggar's Opera." This scheme was approved, and written forthwith, under the auspices of the Duchess, and performed at the theater in Lincoln's-inn fields, under the immediate influence of her grace ; who, to induce the manager, Rich, to bring it upon the stage, agreed to indemnify him all the expenses he might incur, provided that the daring speculation should fail. The offer had first been proposed to Fleetwood and his partners, at Drury-Lane Theater ; but it was at once rejected by them, as a piece that would not be tolerated by a public audience. indeed, they stoutly refused it a rehearsal. The success of the " Beggar's Opera " mainly depended upon two points—the hatred of one party against the Italian Opera, and the hatred of another party against the court. The ridicule of sing-song, united with operatical acting, was complete, and the satire levelled in the original against the king, the queen, and the court, by Gay, who was a disappointed courtier, was too bitter, too witty, not to be felt. It was received with applause.

ARKANSAS. Is " Arkansas " pronounced " Arkansaw ? " If so, why, and when was the pronunciation changed? G. A.

The proper pronunciation of " Arkansaw " is " Arkahnsah," accented on the first and last syllables. This was the old Indian pronunciation, which the early French traders expressed in letters as " Arkansas." The French *a* is always broad, and the final *s* is silent ; so " Arkansas " to the French was pronounced " Arkahnsah." Congress spelled the name, in the act organizing the territory, " Arkansaw," and for some years the name continued to be so spelled. Finally, as every one knew the pronunciation, the original spelling was brought again into use. Then, however, came a people who knew not the history or the pronunciation of the word, who called it " Arkansas," with the accent on the second syllable, and this mispronunciation thrived, and was accepted by many. In 1830 the State Historical and the Eclectic societies jointly investigated the name and its pronunciation, and on their report, the substance of which is given above, the legislature of the state decided that the legal pronunciation was " Arkahnsah."

*Sayings of the Seven Sages of Greece.*  
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*Periander of Corinth.* Please all men. Rashness is dangerous. Pleasures are always mortal, but honors immortal. Be the same to your friends when they are in adversity. Base gain is a very odious thing. Conceal thine own misfortune, lest thou make thine enemies rejoice. Stick to the truth. Hate violence. Moderate pleasure. Follow godliness. Abstain from vices. Show pity to the suppliant. Frequent the company of wise men. Regard good men with esteem. Avoid disgrace. Do those things of which thou mayst not repent. Imitate that which is just. Honor those that are well deserving. Hate slandering. When you have mistaken, change your resolution. Show yourself ready to oblige all men. Fear the magistrates. Perform whatsoever thou hast promised. Do the things that are just. Give place to powerful men. Refrain from an oath. Commend things that are honest. Repay a kindness. Rest is a good thing. Instruct your children. Hate controversy. Attend to what concerns thee. Answer in time. Envy no one. Rule your eyes. Cherish hope. Be affable, or easy to be spoken to. Keep lasting friendship. Study to promote concord. Do not speak merely what you please. Trust not to the resources of the moment. Be not vexed for every trifling cause. Show deference to one above thee in years. Be as frugal as if thou wert immortal. Hope as if thou wert mortal. Be not lifted up with praise. Let great men have precedence. Think on mortal things. Do not a wrong the first. Slander not a dead man. Advise honestly. Do not neglect thyself. Die for thy country. Beget children of women that are free-born. Conceal a secret. Wait for an opportunity. Bestow in order to benefit. Avoid resentment. Make use of thy friends. Delight thy friends.

*Bias of Priene.* Behold thyself in a looking-glass: and if thou shalt seem to be beautiful, do those things which become thy beauty; but if thou beest ill favored, recompense that with thy fair carriage which is not so fair in thy face. Speak not evil of God, but hearken after him. Hear much, speak little. First understand what thou hast to do, and then fall to thy work. Praise not an unworthy man for his riches. Take a thing by persuasion, not by force. Get trouble in thy youth, and wisdom in old age.

*Pittacus of Mitylene.* Do not tell those things beforehand which you are about to do; for if you be disappointed, you will be laughed at. Restore that which is intrusted to your keeping. When thou art hurt by thy friends in small matters, bear with them. Give no bad language to your friends. Be the master over your wife. Look for the same things from your children which you shall do to your parents. Be not slothful. Contend not with thy parents, although thou speak reason. Wish not to command before thou hast

learned to obey. Mock not a wise man in misery. Take heed you do not desire those things that cannot be done. Do not be hasty to speak. Know thyself. Above all things worship God. Reverence thy parents. Restrain pleasure. Do not think thine enemy thy friend. Be not a judge amongst friends. Let not thy tongue run before thy wit. Obey the laws. Do nothing too much. Be willing to hear. Put away enmity. Marry a wife of thine equals ; lest, if thou marriest one of them that are richer than thou, thou get thee masters, not kinsfolk.

*Cleobulus of Lindus.* Be not puffed up at any time. Turn over thy books again. Judge justly. Forbear bad language. Overcome thy parents with forbearance. Cast not off an inferior. Throw not thyself headlong into danger. Love thy friend's things, and preserve them as if they were thine own. Do not to another man that which thou hatest. Threaten no one, for that is womanish. Go sooner to thy friends that are in misery than to them that are in prosperity. A liar depraveth his life with slandering. Whosoever is discreet and wise, hateth liars. Have a care of thy house. Instruct thy children that are most dear to thee. Do good to good men. Throw away suspicion. Remember a courtesy received. Do not covet other men's things. Nothing is more precious than a vow.

*Chilo of Lacedæmon.* Know thyself. Covet nothing that is too much. Misery is an attendant on debts and suits. Exercise temperance. Obey the time. Please the multitude. Be approved in thy behaviour. Hate slanderers. Do not envy any man things that are mortal. Avoid whatever is disreputable. Get an estate honestly. Use wisdom. Do not suspect anything. Be not burdensome.

*Solon of Athens.* Worship God. Relieve thy friends. Sustain the truth. Obey the laws. Moderate thine anger. Hate bad men. Reverence thy parents. Envy no one. Do not swear. Consider what is honest. Commend virtue.

*Thales of Miletus* Honor thy prince. Be like thyself. Take in good part that which thou hast. Follow glory. Love peace. Pack a tale-bearer out of thy house. Try thy friends. Make a promise to no one. Abstain from all vices. Have a care of thy life. Deserve a commendation from all men.

**FOUR-POST BED OF RICHARD III.** At the Blue Boar's Head Inn, Leicester, there is still shown the four-post bed on which Richard III slept on the night of August 21, 1485, his last night on earth, for the next day he was defeated and slain on Bosworth Field. In the reign of Elizabeth the house was kept by a man named Clark, whose wife one day observed a gold coin roll from the bed ; this led to an investigation, when it was found that the double bottom concealed a quantity of gold, partly coined by Richard and partly of an earlier date.



## *QUESTIONS AND ANSWERS.*

PHARAON. (Vol. V, p. 163.) I suspect that *Pharaon* is the game of cards vulgarly denominated *faro*. A. W.

PATER NOSTER. (Vol. V, p. 163.) As a guess, I would say that such a name as "Paternoster Row" originated in the same way as *Notre Dame* street in Montreal. A. W.

MACROCOSM AND MICROCOSM. (Vol. V, p. 163. The term Mikros Kosmos is found in a life of Pythagoras. The compounds *macrocosm* and *microcosm* are not correctly formed, and so are not found in classic literature. The latter term appears in a work of Isidorus Hispalensis, bishop of Seville, *Origincum sive Etymologiarum*, Liber XX, in the seventh century. Thomas Norton, writing on alchemy four centuries ago, declares the "philosopher's stone" to be *microcosmus* and Galen used the phrase *brachys kosmos*. A. W.

ABSTAIN FROM BEANS. (Vol. V, p. 163.) The maxim of Pythagoras "Abstain from beans," has had many interpretations, and perhaps the right one has not been given. The popular one is based on the practice of voting by beans, and would be a direction that most philosophers prefer to follow: to keep clear of political strife. Others, however, affect the physiological explanation—that beans are heating and hard of digestion, accordingly unsuitable. The philosopher is said to have convinced an ass of this, and the donkey ever after eschewed them. In Plutarch's *Symposiaca* reference is made to their orchid shape as being the reason. It is said that there are mystic phallic symbols on each side of the esculent. A. W.

THE QUINQUARTICULAR CONTROVERSY. (Vol. V. p. 163.) The five doctrines controverted between the Calvinists and Arminians, viz., predestination, extent of the atonement, grace, free-will and final perseverance. The *quinquarticular controversy* in England was a dispute which arose at Cambridge in 1594 respecting the above points. In 1626 two fruitless conferences were held on these points; and in 1630 Bishop Davenport preached at court on these disputed matters, and thereby gave great offence to Charles I. The next year the controversy was revived at Oxford and in Ireland, of which Archbishop Usher was then primate. The king issued certain injunctions concerning the bounds within which these points might be discussed.

**BARCHOCAB.** (Vol. V, p. 163.) With the destruction of the Temple at Jerusalem, the Jewish people cherished the expectation of deliverance. Even the Christians of that time appear to have looked for something of the kind. The 24th chapter of Matthew contains predictions, which after we look beyond the symbolic parlance, seems to be an account of the Advent of "the Son of Man" and the sending of angels or messengers to bring in the faithful Jewish people. "This generation shall not pass," says the oracle, "till all these things be fulfilled." Rabbi Akiba, in the reign of Trajan, went through all the countries of the East preaching that the time had come to restore the kingdom. He was a man of wonderful parts; in the language of the Talmud he had been in Paradise and came forth in his right mind. A great secret fraternity existed, and the members were ready to rise as one man. Akiba had a leader in his mind. This was one Bar Chonta, whose name the Rabbi changed to *Bar Cochba*, or Son of the Star (Haggai II, 21). The insurrection began; Samaritans joined with the Jews, making an army of from two to five hundred thousand men. The war was one largely of extermination. In twelve months Palestine was free, and the war was carried into Egypt and Cyprus. A kingdom was set up at Jerusalem, a civil order established and money coined. The Great Synagogue was revived, and the name YAWA (Jehovah?) was made public, becoming the watchword of the new nationality. This name the followers of Jesus would not pronounce. It is conjectured that additions were made to the Gospels, in regard to this matter. Families were divided; Judaean partisans denounced their Nazarean kindred to the authorities, to be scourged and even put to death as partisans of Rome. Hadrian recalled Julius Severus from Britannia, and sent him with an army against Palestine. The war was fiercely contested, but with the common result. More than half a million perished in the battles, and an innumerable host by famine, sickness, and fire at the sack of towns. The country became a desert. The conqueror was merciless in his vengeance. Bar Cochba perished in battle. Akiba was tortured and sent to the executioner, the last Jewish patriot. When Jerusalem fell the "abomination of desolation," the statue of Hadrian, was erected on the site of the sanctuary, and all compelled to do it homage. This was prior to the final overthrow; but the statue remained there for centuries, and every Jew who did not worship it was killed at once. The fate of the Da-

vids of Mara was united upon the devoted Judean race — and they became aliens in their former country. A. WILDER.

ASTEROIDS DISCOVERED IN 1888. (Vol. V. pp. 8-13, continued.)  
 Nine asteroids discovered in 1888 have been added to the 271 given in the January N. AND Q., 1888; and Nos. 269 and 271 have been named, as follows :

269	Justitia,	Sept. 21, 1887	Palisa <sub>60</sub> .
270	Anahita,	Oct. 8,	Peters <sub>47</sub> .
271	Penthesilea,	Oct. 16,	Knoore <sub>4</sub> .
272	Antonia,	Feb. 3, 1888.	Charlois <sub>2</sub> .
273	Atropos,	March 8,	Palisa <sub>61</sub> .
274	Philagoria,	April 3,	Palisa <sub>62</sub> .
275	Sapientia,	April 15.	Palisa <sub>63</sub> .
276	Adelheid,	April 17,	Palisa <sub>64</sub> .
277		May 3,	Charlois <sub>8</sub> .
278	Paulina,	May 16,	Palisa <sub>65</sub> .
279		Oct. 25,	Palisa <sub>66</sub> .
280		Oct. 31,	Palisa <sub>67</sub> .

"THE SUM OF TWO NUMBERS IS EQUAL TO THEIR PRODUCT." A and B, two workmen dispute on the above problem. A says the only number that will solve the problem is 2, namely :

$$2 + 2 = 4 ; \quad 2 \times 2 = 4$$

B says there is another solution to the problem, but does not give it. Can you give any other number that will solve the problem ?

A BYSTANDER.

B is right. It is a problem of algebra. Let  $x$  = the larger number, and  $y$  = the smaller number. Then the equation,  $x + y = xy$ , when solved will give two numbers satisfying the conditions :

$$x = 2.618034+; \text{ and } y = 1.618034+$$

$$\text{Proof. } \begin{cases} 2.618034 + 1.618034 = 4.236068 \\ 2.618032 \times 1.618034 = 4.236068 \end{cases}$$

Many other relations also exist between these two numbers which may interest the reader :

$$\begin{aligned} x &= 2.618034 \\ y &= 1.618034 \\ x - 1 &= y = 1.618034 \\ y + 1 &= x = 2.618034 \\ y^2 &= x = 2.618034 \end{aligned}$$

$$\begin{aligned} y^3 &= x + y = 4.236068 \\ y^3 &= xy = 4.236068 \\ x^2 - y^2 &= 4.236068 \\ x^2 &= y^4 = 6.854102 \\ (y - 1)^2 + (y - 1) &= 1 \end{aligned}$$

"CARRYING COALS TO NEWCASTLE." (Vol. V, p. 180.) A phrase to signify anything unnecessarily done. Newcastle is noted for its coal-fields, hence it would be unprofitable to send coal to that town. Chaucer has a similar phrase :

And add more coals to Cancer when he burns.

Fuller, in his *Gnomologia*, (1732), has "You bring owls to Athens," which has the same signification, as owls were plentiful in that city.

CAXTON.

"SOUND ON THE GOOSE." (Vol. V, p. 68.) Bartlett's "Dictionary of Americanisms" says : "Sound on the goose" is a phrase originating in the Kansas troubles, and signifying true to the cause of slavery.

A. H.

LETTERS OF "JUNIUS." (Vol. V, p. 43.) "Junius Unmasked ; or, Thomas Paine author of the Letters of Junius, and of the Declaration of Independence," Washington, D. C., 1872, was written by Joel Moody, Mound City, Kansas. Mr. Burr claims to be only its god-father.

J. FRANCIS RUGGLES, Bronson, Mich.

ZOUNDS. (Vol. II, p. 460 ; III, 19.) I have recently found an instance of the older form of this word, which may be interesting :

I cannot Martinize—swear by my say in a pulpit, and rap out gogswounds in a tavern. — GREENE, *Farewell to Folly*, 1590, (prefatory epistle).

CAXTON.

ORDER OF THE CHERUBIM. What is the order for placing the cherubim ?

J. P. SHIELDS.

As far as our observation goes it seem to have been optional. For instance, this correspondent is referred to the following :

In Genesis 1, 20, it is given as	Man, Ox, Eagle, Lion.
In Ezekiel 1, 10, it is given as	Man, Lion, Ox, Eagle.
In Ezekiel x, 14, it is given as	Ox, Man, Lion, Eagle.
In Revelation iv, 7, it is given as	Lion, Ox, Man, Eagle.
In the Zodiac it is	Ox, Lion, Eagle, Man.
In Godfrey Higgin's "Anacalypsis,"	Lion, Ox, Man, Eagle.
In the legend of the H. B. of L.,	Man, Eagle, Ox, Lion.
In "The Trumpet of Israel" it is	Ox, Lion, Man, Eagle.

We therefore infer that it is optional how these are arranged. Mr. Higgins's arrangement is the same as that in Revelation.

**THE CRESCENT.** (Vol. V, p. 163.) A secret religion underlay ancient beliefs, and hence a significant symbolism was adopted. Strictly speaking, there are no new religions, but every one is in some way an outgrowth from the one preceding it. This is as true of Mohammedanism, as of any other. The founder had already been identified with the doctrines of Hanyf ; and after his death the same thing occurred as in other instances. His doctrines were revised and amalgamated with these of preceding faiths, and the symbols also were adopted. Some religions have a masculine outlook ; others are feminine. Saivism and Vaishnavism in India, Yavism and Alahism in Palestine, Prottestantism and Romanism in Christendom, are illustrations. The ancient Arabic religion of Mekka was female. Al Huza or Astarté was their goddess, and like the other Mother-goddess, had a black or magnetic stone for a symbol. It was built into the structure of the Kaaba, and is venerated like stone on Mount Pessinos, or at Kyprus. The holy day is Friday—the Venus' day and woman's day of the whole world—anciently the day of Good Fortune, till the Christian practice of executing criminals reversed the superstition. Their adoption made Islam acceptable to the goddess-worshipping populace. The crescent naturally came in with the other symbols of femininity. Its meaning is this : “ The moon is the isthmus which joins the immortal principle of life to earthly existence.” It denotes maternity, and hence the crescent constituted the horns of Ashtaroth-Karnaim, of Isis, and other divinities. Whatever the imams and others may teach to the populace, there is a secret religion behind which the instructed ones understand. Their beliefs, many of them, are remarkably compatible with this sentiment.

A. WILDER.

**BANBURY CROSS.** (Vol. V, p. 180.) Banbury Cross is a borough in Oxford County, England, celebrated for its buns, tarts, and cheese. But its buns will give one the dyspepsia for a week, as I found to my sorrow in 1887.

S. L. G.

**KING LEMUEL.** Vol. V, p. 180.) It is not known who the Lemuel, mentioned in Proverbs xxxi, 1, was. Most interpreters refer it to Solomon, some to Hezekiah, while others refer it to some petty Arabian prince, or to an imaginary person.

S. L. G.

**KING COLE.** Who was the personage that went by the name of King Cole?  
**JONATHAN.**

About the middle of the last century, or a little later, there lived a curious character, well known then by the appellation of King Cole. He was a fish salesman at Billingsgate, and on the day of the liberation of the celebrated John Wilkes, he always invited 45 friends to dine; and he treated them with a plum-pudding containing 45 pounds of flour, and 45 of fruit; it was boiled 45 hours, and conveyed to the place, where the party were at dinner, with flags and music, and 45 butchers with marrow-bones and cleavers. There were also upon the table, 45 pigeon-pies, and 45 apple dumplings. When this old gentleman lost his son he consolded himself by using the same mystical number. He had him buried 45 miles from town, attended by 45 fish-mongers; he paid the sexton 45 shillings, for 45 tolls of the bell; he mourned 45 days in deep mourning and 45 days in half mourning. See Oliver's "Pythagorean Triangle for account of this singular man.

How is this attachment for certain numbers to be accounted for? Let the physiologist find it out if he can. The belief in the efficacy of certain numbers is too firmly fixed in the mind of of some persons to admit of being extinguished by argument of sober reason, be those arguments ever so specious and sound.

**THE THREE IMPOSTORS.** Who are said to be the three impostors, and who was the author of the book which bore that title? A. P. A.

Toward the end of the tenth century a rumor was current that a book had appeared by the above title, to prove that the world had been grossly deceived three times, by three impostors, each founding a religion. The most extravagant ideas prevailed and the authorship of the unknown work was in turn attributed to the emperors Frederick I and II, Averrhoes, Petrus a Vineis, Alphonzo X, king of Castile; Co-caccio, Poggio, L. Aretin, Pomponazzio, Machiavelli, Erasmus, P. Aretino, Ochinus, Servetus, Rabelais, Gruetus Barnaud, Muret, Nachtigall, Giordano Bruno, Campanella, Milton, and others. In 1716 a person named Haag claimed to have the original in his possession. A book appeared published from a MS. of 1598. Nothing is known of its author. Some think the original title was not "The Three Impostor," as it does not call either of the founders — Moses, Jesus, or Mohammed—outright impostors.

POETRY AND PROJECTILES. Prof. Longfellow has recorded a wonderful story of the fleetness of his Indian hero.

*" Swift of foot was Hiawatha ;  
He could shoot an arrow from him,  
And run forward with such fleetness,  
That the arrow fell behind him.  
  
Strong of arm was Hiawatha ;  
He could shoot ten arrows upwards,  
Shoot them with such strength and swiftness,  
That the tenth had left the bow-string  
Ere the first to earth had fallen."*

If we suppose an arrow shot upward every second, then as ten arrows must be in the air at one time, the time of flight of each arrow must be at least ten seconds, and if the time of ascending is the same as descending, though really it is somewhat less, the height attained is found to be sixteen times the square of five, or 400 feet. As the greatest horizontal distance to which a body can be thrown is double the height it would attain if projected with the same velocity, it is evident that if Hiawatha put forth his maximum " strength of arm " in shooting forward as well as upward, the greatest range of his arrow would be 800 feet. As a projectile attains its greatest height and remains the longest in the air when thrown vertically upward, the time of flight of the forward shot must be less than ten seconds. The theoretical angle of greatest range being 45 degrees, and the initial velocity being equal to that due to gravity acting five seconds, or 160 feet, this velocity multiplied by the sine of 45 degrees, gives the horizontal component of the initial impulse, which is 113,136, and hence the quotient of 800 divided by this component, which is seven seconds nearly equals the actual time of the flight of the arrow. Now as the arrow flies 800 feet in seven seconds, or 114.3 feet per second, it is plain that Hiawatha must exceed this speed to get ahead of the arrow, which would require him to run a mile in about 46 seconds, or more than 78 miles an hour. It is to be feared that such runners as he who won the lovely Minnehaha have long ago departed

*" To the Islands of the Blessèd,  
To the kingdom of Ponemah,  
To the land of the Hereafter."*

N. B. WEBSTER IN *The Reveille.*

## QUESTIONS.

---

1. Define the word *root* when it is a value of  $x$  in an equation of any degree, and also the word when it is a base of any power. R.
2. What is the difference between the "Antichrists" (I John II, 18), and the "false Christs" (Matthew XXIV, 24)? R.
3. Who were the "Twelve Imams" and when did they flourish? Who is the Mahdi, and is he to be the last Imam? R.
4. Give the real etymology of the words *whole, whirl, wheel, world*. R.
5. What authority is there for designating the period before the present era as the Jewish Dispensation, and the latter period as the Christian Dispensation? ALPHA.
6. Why should the woman whom it is said that King Saul visited the night before his death, be denominated "the *witch* of En-dor," while the text reads, "A woman that hath a familiar spirit at En-dor" (I Samuel XXVIII, 7)? ALPHA.
7. What is the reason for Joseph to be buried at Shechem, (Joshua XXVI, 32), when Abraham, Isaac, and Jacob, with their several wives, were entombed at Hebron (Genesis XLIX, 31; L, 13)? ALPHA.
8. What was "the Testimony" mentioned in Exodus XVI, 34, and elsewhere? ALPHA.
9. Why, when Jacob and Laban made a covenant together, does each swear a different imprecation: Laban by "the God of Abraham, the God of Nahor, the God of their father"; and Jacob by "the Fear of his father Isaac" (Genesis XXXI, 53)? ALPHA.
10. Why was the island in the St. Lawrence river, near Montreal, called "Isle of Jesus," and those in the west of Lake Superior, the "Apostles' Islands"? FELIX OTTINGER.
11. What is the first account of *wire* that we read of either in sacred or profane history? D. M. DRURY.
12. Where is the first recorded instance of a *seventh son*, and also a *seventh son of a seventh son*? J. PAYSON SHIELDS.
13. Rev. Dr. M. Edrehi wrote a book entitled "An Historical Account of the Ten Tribes, settled beyond the River Sambatyon, in the East." Where is the river *Sambatyon*? OLIVER.
14. How many persons, or other subjects have had the "mark of the beast" and "the number of his name" or 666 applied to them; and who and what are some of them? INQUIRER II.



1. What is the origin and true meaning of the word *bonfire* ?

ALPHA.

2. Does the word *cross* in its proper sense denote a crossed piece of timber as it is now made to imply? A *cruz* denoted a tree, or other instrumentality for putting men to death, whether by hanging, impaling, or piercing with weapons ; and a *stauros* was an upright stake, or a pole for impaling. The Aztecs of Mexico are said to have fixed a victim to a tree every spring to shoot to death with arrows. Would not this be a crucifixion?

ALPHA.

3. Was circumcision primally an African or an Asian custom?

ALPHA.

4. What is the purport and etymology of the syllable *go*, in Latin words as *origo*, *virgo*, *virago*, etc.? Perhaps it is suggested by the word *li*, or terminal *l* in English. *Gir*, or *ga*, seems to have been used to signify a young person, in which case *girli*, or *girl*, may denote a woman.

ALPHA.

5. We are informed that Job's household, was as follows :

Job I, 2-3.

Sheep,	7,000
Camels,	3,000
Yokes of oxen,	500
She asses,	500
Sons,	7
Daughters,	3

Job XLII, 12-13.

Sheep,	14,000
Camels	6,000
Yokes of oxen,	1,000
She asses,	1,000
"Also," Sons,	7
"Also," Daughters,	3

Does the "also," in XLII, 13, give us to understand that his children were doubled, and that he had 14 sons and 6 daughters? X.

6. What are some of the most "remarkable coincidences" that have occurred and been taken note of ?

SEARCHER.

7. What was the size and shape of the ancient cities of Jerusalem, Rome, Babylon, Nineveh, etc. ?

HANNAH.

8. What is the "quincunx order" for planting trees? JOEL.

9. Who first solved the problem of the "Tour of the Chess Knight" ?

LOVER OF GAMES.

10. Is there more than one place on the globe called "the Bight," that is, on the west of Africa ; also, more than one "Levant," that is, on the west of Palestine?

OBSERVER.

11. Why are monkeys called *quadrumana*, "four-handed" ? I.

*Mathematical Bibliography.*

Several inquiries have been made for the publications of the United States devoted wholly or in part to mathematics. We therefore publish this bibliography as a reference list for those who are interested in this branch of science. Our library contains all but five of the serials wholly devoted to the science, and nearly all those containing a department devoted to it, although some of the files are broken.

## DEVOTED WHOLLY TO MATHEMATICS.

**THE MATHEMATICAL CORRESPONDENT** ; New Elucidations, Discoveries, and Improvements. Edited by George Baron, New York. Commenced January, 1804, and published monthly for one year and discontinued. Vol. I, pp. 248. Portrait of the editor. 12mo.

**THE ANALYST ; OR MATHEMATICAL MUSEUM** ; New Elucidations, Discoveries, and Improvements. Conducted by Robert Adrain, New York. Nos. I-V, pp. 150, Philadelphia, 1808. No. I, New York, 1814.

**THE SCIENTIFIC JOURNAL.** Conducted by Mr. Marrat. Published at Perth Amboy, N. J. February to September, 1818 ; July and October, 1819. Nos. I-IX, pp. 184.

**LADIES, AND GENTLEMEN'S DIARY ; AND ANNUAL PHILOSOPHICAL MAGAZINE ; REPOSITORY OF SCIENCE AND AMUSEMENT.** Edited by Melatiah Nash, New York. Commenced 1820 and published three years. Nos. I-III, 1820-1822, pp. 72, 96, 96. 12mo.

**THE MATHEMATICAL DIARY ; New Researches and Improvements in the Mathematics, with Collections of Questions.** Conducted by R. Adrain ; published by James Ryan, New York. Commenced in 1825, and thirteen numbers published, quarterly and semi-annually. Vol. I, Nos. I-VIII, 1825-1827, pp. 248 ; Vol. II, Nos. IX-XIII, 1828-1832, pp. 316. Portrait of Lagrange. 12mo.

**THE MATHEMATICAL MISCELLANY.** Commenced February, 1836 ; ceased November, 1839. Conducted by Charles Gill ; published at Flushing, Long Island, N. Y. ; semi-annually. Vol. I, Nos. I-VI, pp. 414. Supplement : Useful Tables relating to Cube Numbers calculated and arranged by William Lenhart, York, Penn. ; pp. 16. Vol. II, Nos. VII-VIII, pp. 142. 8vo.

**THE CAMBRIDGE MISCELLANY OF MATHEMATICS, PHYSICS, AND ASTRONOMY.** Commenced July, 1842 ; ceased January, 1843 ; quarterly. Edited by Benjamin Peirce and Joseph Lovering ; Cambridge, Mass. Vol. I, Nos. I-IV, pp. 192. 8vo.

**THE MATHEMATICAL MONTHLY.** Commenced October, 1858; discontinued September, 1861; monthly. Edited by J. D. Runkle, Cambridge, Mass. Vol. I, pp. 416; Vol. II, pp. 432; Vol. III, pp. 388. 4to.

**THE INDIANA MATHEMATICIAN.** Edited by W. D. McSwane, Petersburg, Ind. Commenced August, 1879. Vol. I, No. 1, pp. 8. Only one number published. 4to.

**THE MATHEMATICIAN; SCIENCE OF MATHEMATICS.** Edited by Royal Cooper, Washington, D. C. Commenced January, 1877. Vol. I, No. 1. Only one number published. 8vo.

**THE ANALYST; PURE AND APPLIED MATHEMATICS.** Commenced January, 1874; discontinued November, 1883; 1874, monthly; 1874-1883, bi-monthly. Edited and published by Joel E. Hendricks, Des Moines, Iowa. Vols. I-X, 1874-1883. 8vo.

**ANNALS OF MATHEMATICS.** Commenced March, 1884; bi-monthly. Edited by Ormond Stone and William M. Thornton, University of Virginia, Va. Vols. I-IV, 1884-1888. 4to. This succeeded to **THE ANALYST** by J. E. Hendricks.

**MATHEMATICAL ALMANAC AND ANNUAL; illustrated.** Edited by Artemas Martin; published by Daughaday & Becker, Philadelphia. Vol. I, No. I. 1871. pp. 52. 4to. Only one number published.

**THE MATHEMATICAL VISITOR.** Edited and published by Artemas Martin, Erie, Penn. Commenced March, 1877; Vol. I, Nos. 1-VI, pp. 198, 1877-1881; Vol. II, Nos. 1-II, pp. 64, 1881-1883. 4to.

**THE MATHEMATICAL MAGAZINE; ELEMENTARY MATHEMATICS.** Edited and published by Artemas Martin, Erie, Penn. Commenced January, 1882; quarterly. Vol. I, Nos. 1-XII, pp. 230, 1882-1884. 4to.

**THE SCHOOL MESSENGER; Elementary Mathematics, Queries and Answers, Grammar, History, Philosophy, Geography, etc.** Edited and published by G. H. Harvill, Ada, La. Commenced February, 1884; monthly. Vols. I-III, 1884-1886. **THE MATHEMATICAL MESSENGER**, bi-monthly, Vols. IV-V, 1887-1888. 8vo.

**AMERICAN JOURNAL OF MATHEMATICS.** Published under the auspices of the Johns Hopkins University, quarterly. Baltimore, Md. J. J. Sylvester, editor-in-chief, Vols. I-IV; Simon Newcomb, editor-in-chief, Vols. VII-XI. 1878-1888. 4to.

**ASTRONOMICAL JOURNAL** Conducted and published by Benjamin A. Gould, Cambridge, Mass. Vols. I-VI, 1856-1861, Nos. 1-144; Vols. VII-VIII, 1886-1889, Nos. 145-192; 24 numbers. 4to.

**THE SIDEREAL MESSENGER.** Edited by O. M. Mitchel, Cincinnati, Ohio. Astronomical Science. Vols. I-III, 1846-1848, monthly. 4to.

**THE SIDEREAL MESSENGER.** Northfield, Minn. Conducted by William W. Payne. Vols. I-VII, 1881-1888. 8vo.

## MATHEMATICAL DEPARTMENTS.

**YATES COUNTY CHRONICLE.** Mathematical Department conducted by Dr. S. H. Wright, Penn Yan, N. Y. Weekly, 1873-1878. 2516 Problems published ; with solutions.

**THE WITTENBERGER.** Springfield, Ohio. Mathematical Department conducted by William Hoover, Vol. IV, Nos. 1-10, October, 1876, to July, 1877. 4to. Vols. V-VII, (9 Nos. in a Vol), 1877-1880 ; Vol. VIII, No. 1. October, 1880. 8vo.

**THE NORMAL MONTHLY.** Edited by Edward Brooks, Millersville, Penn. Commenced September, 1873 ; discontinued August, 1876. Mathematical Department edited by D. M. Senseing, Vols. I-II. ; by Frank Albert, Vol. III. Department of Higher Mathematics edited by Artemas Martin, Vol. III. Monthly. 1873-1876. 4to.

**THE SCHOOLDAY VISITOR.** Mathematical Department conducted by Artemas Martin. Vols. XIV-XIX, 1870-1875 ; monthly. Publication discontinued 1875. Philadelphia, Pa.

**THE NATIONAL EDUCATOR.** Kutstown, Penn. A. R. Horne, editor ; Isaac F. Christ, publisher. Mathematical Department conducted by F. P. Matz. August 4, 1874, to April, 1879. Vols. XIV-XVIII.

**THE WESTMINSTER MONTHLY.** Fulton. Mo. Mathematical articles by J. Newton Lyle. Vol. VII, Nos. 1-3, Sept.-Nov. 1877. 8vo.

**THE SCHOOLMASTER.** Hempstead, Long Island, N. Y. Edited by Timothy Clowes. Mathematical Department. Nos. 1-14. 1831.

**THE WHEEL.** Science and the Useful Arts. New York, Munn & Co., publishers. June, 1868. The ten problems of P. H. Vanderweyde. Also the question of the revolution of a wheel. Only one number published ; pp. 72. 8vo.

**THE TEACHERS' COMPANION.** C. W. Hagar, publisher, New York. Mathematical Department conducted by Albert P. Southwick. Vols. I-IV, 1880-1883 ; monthly. 4to.

**THE UNIVERSITY MONTHLY.** Education. New York. Mathematical Department. Vols. I-II, 1871-1872. 8vo.

**THE NORMAL TEACHER.** Danville, Ind. J. E. Sherrill editor and publisher. Education, Teaching, Mathematics. Vols. I to V, (No. 7) 8vo., Vols. V (No. 8), to VI (No. 6) 4to., 1878-1884. Vols. VI (No. 7), to Vol. VIII (No. 10) W. H. F. Henry, editor and publisher, Indianapolis, Ind. Vol. VIII (No. 11) to IX (No. 7), 4to., by Normal Teacher Co., Indianapolis, Ind. 1878-1886.

**THE ORIENTAL CASKET** Philadelphia, Penn. Edited by Emerson Bennett. Mathematical Problems and Solutions. Vol. I, 1882. 4to.

**EDUCATIONAL NOTES AND QUERIES.** Edited and publish by William D. Henkle, Salem, Ohio. Vols. I-VII, 1875-1881. 8vo.

**NATIONAL TEACHER'S MONTHLY**, Vols. I-II; **BARNES' EDUCATIONAL MONTHLY**. New York. Mathematical Department conducted by F. P. Matz, Vols. III-VI; by G. I. Hopkins, Vol. VII. November, 1875, to October, 1881. 8vo.

**NEW HAMPSHIRE JOURNAL OF EDUCATION.** Mathematical Department conducted by E. T. Quimby and Ephraim Knight. Vols. I-VI. Manchester, 1857; Concord, 1857-1862. 8vo.

**EDUCATIONAL REVIEW OF CENTRAL MISSOURI**; Education, Literature and Science. Commenced September, 1881; discontinued April, 1882. Mathematical articles by J. Newton Lyle, Fulton, Mo. Vol. I, Nos. 1-8. 4to.

**WISCONSIN JOURNAL OF EDUCATION.** Madison, Wis. Mathematical Department. Samuel Fallows and John B. Pradt, editors, Vols. I-III; Edward Searing and John B. Pradt, editors, Vols. IV-V. 1871-1875. 8vo.

**OHIO EDUCATIONAL JOURNAL.** Columbus, Ohio. E. E. White, editor to 1874. William D. Henkle, editor, 1875-1881.

**THE PENNSYLVANIA SCHOOL JOURNAL.** J. P. Wickersham, editor. Mathematical articles by Elias Schneider, Edward Brooks, and J. M. Pryor. 1871-1874. 8vo.

**THE RHODE ISLAND SCHOOLMASTER.** Providence, R. I. Mathematical Department conducted by N. W. DeMunn. 1860-1874. 8vo.

**THE MASSACHUSETTS TEACHER.** Boston, Mass. Mathematics, and articles on mathematics. 1847-1874. 8vo.

**THE REVEILLE.** Northfield, Vt. Mathematical Department conducted by N. B. Webster, Norfolk, Va. 1880.

**ANSONIA MIRROR.** John S. Royer, editor, Ansonia, Ohio. Mathematical Department; 49 problems and solutions. 1882-1883.

**TONAWANDA JOURNAL.** Tonawanda, N. Y. Mathematical Department. 40 problems and solutions. 1877.

**AMERICAN EDUCATIONAL MONTHLY.** New York. J. W. Schermerhorn & Co., publishers. Mathematical Department portion of the time. Vols. I-XIII, 1864-1876. 8vo.

**THE LIBRARY BULLETIN**; Harvard University. References in Analytic Geometry, by James M. Peirce. Nos. 8, 10, 11, June, 1878, October, 1878, to January, 1879, February and March, 1879. 8vo.

**AMERICAN TEACHER.** Boston, Mass. A. E. Winship and W. E. Sheldon, editors. Mathematical Department conducted by Albert P. Southwick. Vols. I-V, 1883-1888. 4to.

**MISCELLANEOUS NOTES AND QUERIES WITH ANSWERS.** Mathematics, History, Folk-Lore, Mysticism, Science, Art, etc. Manchester, N. H. Vol. I (Nos. 1-10), edited by N. B. Webster, Norfolk, Va. Vols. I (Nos. 11-20), to Vol. V, Nos. 21-78, edited by S. C. Gould, Manchester, N. H. 1882-1888. 8vo.

**THE SCHOOL JOURNAL.** New York. E. L. KELLOGG & Co., publishers. Mathematical Department a portion of the time. 1854-1888.

**THE SCHOOL BULLETIN** Edited and published by C. W. Bardeen, Syracuse, N. Y. Mathematical Department, 1878-1881. Vols. I-XIV, 1874-1888. 4to.

**THE MANUFACTURER AND BUILDER.** Philip H. Vanderweyde, editor, New York. Mathematical problems and solutions. Vol. I-XXI, 1868-1888. Monthly. 4to.

**EASTERN OHIO TEACHER.** Cambridge, Ohio. Mathematical Department conducted by William R. Scott. Vols. I-VIII, September, 1880, to September, 1888.

**NEW ENGLAND JOURNAL OF EDUCATION.** Boston, Mass. Thomas W. Bicknell, editor. Mathematical Department conducted, 1875-1885, by E. T. Quimby; 1886, by Lucius Brown; 1887-1888, by F. P. Matz. Vols. I-XVIII, 1875-1888. Weekly. 4to.

**THE SCHOOL VISITOR.** Practical Mathematics, Pedagogics, etc. Edited by John S. Royer; published at Ansonia, Ohio, 1880-1884; at Gettysburg, Ohio, 1885-1888; monthly. Vols. I-IX. 8vo.

**THE DAVENPORT MONTHLY.** Edited by J. C. Duncan, Davenport, Iowa. Commenced July, 1887; monthly. Mathematical Department edited by J. R. Baldwin. Vol. I, Nos. 1-13, July, 1887, July, 1888; Vol. II, August, 1888. 4to.

**SCIENTIFIC AMERICAN.** Munn & Co., editors and publishers, New York. Contains from time to time mathematical problems and solutions. Vols. I-LIX; 2 volumes a year; 1859-1888. 4to.

**A JOURNAL, SOUTH BEND, IND.** Mathematical Department edited by William Hoover, about 1876. 74 Problems and solutions were published.

**A JOURNAL, MANNSVILLE, N. Y.** Mathematical Department edited by O. H. Merrill, about 1876. 218 problems and solutions published.

#### MATHEMATICAL ALMANACS

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**FARMERS' ALMANAC.** Published by Barcalow & Co., New York. Mathematical Department, Nos. 53-62, 1871-1880. 8vo.

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#### MATHEMATICAL PROBLEMS.

**ARITHMETICAL PROBLEMS, OR QUESTIONS IN ARITHMETIC,** for the use of advanced classes in schools; 1000 problems. By W. H. Farrar; pp. 156. Boston, Mass. 1856. 12mo.

**A KEY TO FARRAR'S ARITHMETICAL PROBLEMS,** for teachers only. By W. H. Farrar; pp. 118. Boston, Mass. 1860. 12mo.

**ARITHMETICAL QUESTIONS,** for the recreation of the teacher and the discipline of the pupil; 200 problems. By Rev. U. Jesse Knisely; pp. 69. Philadelphia, Penn. 1860. 12mo.

**MISCELLANEOUS MATHEMATICAL PROBLEMS,** Original and Selected, designed for those who have inclination, leisure, and ability to solve them; 125 problems. By James Matteson; pp. 12. DeKalb, Ill. 1860. 8vo.

**A COLLECTION OF DIOPHANTINE PROBLEMS AND SOLUTIONS.** 24 problems. Compiled by James Matteson, DeKalb, Ill. Published by Artemas Martin, Washington, D. C. pp. 24. 1888. 8vo.

**PROBLEMS IN MATHEMATICS,** prepared for the Ansonia High School; 50 problems. By John S. Royer; pp. 16: answers, p. 1. Ansonia, O. 1878. 8vo.

**MATHEMATICAL QUESTIONS; Arithmetical and Algebraical Amusements;** 36 problems. Appendix: Arithmetical Questions, for the benefit of city and country schoolmasters; 26 problems; pp. 8. New York. 8vo.

**MATHEMATICAL RECREATIONS,** containing solutions of many difficult and important equations, and of several useful problems in geometry, surveying, and astronomy, together with a method of finding the roots of equations by projection. By H. N. Robinson; pp. 86. Albany, N. Y. 1851. 8vo.

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Number books and pamphlets, problems,	7=70



## *Publications Received.*

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**MATHEMATICAL MAGAZINE.** Edited and published by Artemas Martin, M. A., Ph. D., LL.D., Washington, D. C. October, No. 12, 1884. Quarto, pp. 46+viii. This number completes Vol. I, pp. 230 of this very excellent mathematical magazine of elementary mathematics. Terms, \$1.00 a year. October No. 1884, 50 cents.

**OUR SCHOOLDAY VISITOR ILLUSTRATED MATHEMATICAL ANNUAL,** for 1871. Philadelphia. Edited by Artemas Martin. Quarto, pp. 52+xii. Problems, solutions, puzzles, etc. Price, 35 cents.

**A COLLECTION OF DIOPHANTINE PROBLEMS AND SOLUTIONS.** Compiled by James Matteson, M. D., DeKalb, Ill. Published by Artemas Martin, Washington, D. C. 24 problems and solutions by Reuben Davis, Sr., Abijah McLean, David S. Hart, and Jas. Matteson, (the latter three now deceased). 8vo., pp. 24. Price, 35 cents. Address Artemas Martin, U. S. Coast Survey Office, Washington, D. C.

**A BOOK OF STUBBORN FACTS. TRIGONOMETRICAL SCIENCE** as viewed from a Practical Stand Point. By Samuel C. Goodsell, Westville, Ct. Submitted to the International Institute for the Preservation of the Anglo-Saxon Weights and Measures showing the irreconcilable differences between two systems of geometry, one theoretical and one practical. pp. 16. 1885. 8vo.

**A NEW PROPOSITION IN EUCLIDEAN GEOMETRY.** By John M. Richardson, Daingerfield, Texas. "If any two sides of a triangle be produced through their common vertex; and on said sides and prolongations rhombi be described: the sum of said rhombi will be equal to the conjugate parallelogram described on the third side of the given triangle." From the *Mathematical Messenger*. pp. 8. 1888. 8vo.

**THE PROBLEM : TO TRISECT AN ANGLE.** By Lawrence S. Benson, 25 Bond St., New York. Sketch of the author. pp. 4. 1888. 8vo.

**COMPUTATION OF THE RATIO OF THE DIAMETER OF A CIRCLE TO ITS CIRCUMFERENCE TO 208 PLACES OF FIGURES.** By Wm. Rutherford, communicated to the Royal Society, May 6, 1841. From Dulau & Co., 37 Soho Square, London, dealers in mathematical books. 4to.

**THE REVELATION OF THE SHECHINAH ; or the Tree of Life in the Holy Royal Arch.** By "*Vincit, qui se vincit*," Hon. Magus, a Rosicrucian at the Metropolitan College. Pp. 31. London, 1887. 12mo.

**SMITH'S PLANETARY ALMANAC AND WEATHER GUIDE FOR 1889.** Enlarged and improved. Continuation of Vennor's Almanac. Every person from Saskatchewan to Texas and Nova Scotia to California wants it. Price, single, postpaid, 10 cents. 12 copies, \$1.00. Address Walter H. Smith, 31 Arcade St., Montreal, Canada.



**THE EDENIC DIET.** The Path to Health and Freedom. "As the Life is, so is Man."—*Karma*. Published by Isaac and Sara Rumford, 37th and Grove Sts., Oakland, Cal. A pamphlet giving an idea of "Edenic work in a compact form." The vegetable diet. Price, 25 cents. Pp. 32. 1888. 8vo.

**THE ATTONEMENT.** To whom made? By a Doctor of Divinity. Mental Healing Publishing Co., 53 Boylston St., Boston, Mass. Price, 10 cents. Pp. 16. 1888. 12mo.

**HISTORY OF THE TOWN OF VERNON, VT.** By Artemas Henry Washburn, Esq., and his wife Lucinda Wright Baily Washburn. pp. 180. Ludlow, V. 1885. 8vo.

**POPULATION OF GROTON AT DIFFERENT TIMES;** with some Notes on the Provincial Census of 1715. By Samuel Abbot Green, D. D. pp. 8. Cambridge, Mass. 1888. 8vo.

**GROTON HISTORICAL SERIES.** By Samuel Abbot Green, M. D. Vol. I, Nos. I-VIII. Vol. II, Nos. I-VII. Groton, Mass. 8vo.

**TRIBUTE OF THE MASS. HISTORICAL SOCIETY TO FRANCIS PARKER.** Privately printed. Cambridge, Mass. pp. 72. 1887. 8vo.

**THE DEDICATION OF MEMORIAL BUILDING AND BAGG HALL.** Princeton, Mass. pp. 108. Worcester. 1887. 8vo.

**CENTENNIAL ANNIVERSARY OF THE TOWN OF SULLIVAN, N. H.,** on September 27, 1887. By J. L. Seward, editor, 121 Gorham St., Lowell, Mass. Pp. 76. 1888. 8vo. Price, \$2.50 a copy.

**SATAN'S MASTERPIECE ;** What is it? Where is it? How will it end? Paganism, popery, anti-christ, priesthood, etc. By John Hampden, 3 Park Place, Croydon, Surrey, England. Pp. 16. 1888. 16mo. Price, one penny.

**THE SERVANT QUESTION.** Hints on the choosing and management of servants, by H. S. Drayton, M. D. Published by Fowler & Wells, 775 Broadway, New York. Price, 10 cents. Pp. 14. 1888. 12mo.

**TWO LUNATICS ;** a story written by one of them. Published by Theo. Berendsohn, 86 Fulton St., New York. Mr. Neva is the author lunatic and Mr. Lore, a Concord philosopher, the other lunatic. The "Harvest-Home of Genius" is to be founded under Utopian principles, and a perfect code. "Watch and wait—the balloon is coming." Price, 50 cents. Pp. 157. 1888. 12mo.

**AMERICAN FOLK-LORE JOURNAL.** Edited by Franz Boas, T. Frederick Crane, J. Owen Dorsey; W. W. Newell, General Editor. Commenced April 1888. Published quarterly. Boston and New York. Annual subscription, \$2.00 Single numbers, \$1.00. 96 pages each number. 8vo. Address W. W. Newell, Cambridge, Mass.

**LIBRARY NOTES.** Improved Methods and Labor-Savers, for Librarians, Readers and Writers. Edited by Melville Dewey. Boston Library Bureau, 146 Franklin St, Boston, Mass. Quarterly; \$1.00 per year. 50 cents a number. 8vo. Vol. 3, No. 9, June, 1888,





THE BIZARRE.

# NOTES QUERIES

507-12

A MONTHLY MAGAZINE OF

*HISTORY, FOLK-LORE, MATHEMATICS,  
MYSTICISM, ART, SCIENCE, Etc.*

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“It neither speaks nor hides, but signifies.”—*Hereclitus*.

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VOLUME VI.

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S. C. & L. M. GOULD,  
MANCHESTER, N. H.

1889.

cur f w d dis and p  
A sed iend rought eath ease ain.  
bles fr b br and ag

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Seven hours to law,—to soothing slumber seven,—  
Ten to the world alot,—and all to heaven.

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Qu an tris di c vul stra  
os guis ti ro um nere vit.  
H san Chris mi t mu la

## P R E F A C E .

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Again, we are to prefix a few words by way of preface. Many of the thoughts in the present volume may seem new ; yet the larger part of them are not our own. We believe some of the oligies that have been discarded for centuries past, and had become well nigh obsolete, will yet be searched out and flourish in the coming decades ; yea, they will be like " the stone which the builders rejected," unearthed and become " the head of the corner." It has become a sort of second nature with us to look for this stone in all quarters. We are sometimes led into discredited literature for sources of information. We desire " to pick up pearls wherever found," and give them to the world. Whenever it is shown that we are not original, so much the better. No one lifetime is sufficient to solve all the problems of the universe. Some begin the solution, while others carry it forward, for others still to finish, perhaps. For, after some facts are found, the method of science consists in assuming a hypothesis to account for them ; and if that hypothesis serves the purpose, it passes over to a theory, and in time is received as the truth in the case, and thus many problems are solved. Knowledge, however, is progressive, and the car of science moves onward.

A day will come when many things which may now seem novel and paradoxical, will be acknowledged by enlightened man as the actual and positive, and the embodiment of philosophy itself. A Morse pioneered the telegraph, but now an Edison walks arm in arm with Jupiter. The present time seems to be the passing into an age of physical and mental light. Many persons believe it to be that time in which " new order of things " are to prevail, as spoken of by Virgil :

Magnus ab integro saeculorum nascitur ordo ;  
Jam nova progenies caelo dimititur alto.

Thomas Browne, the philosopher of Norwich, wrote about order :

" All things began in order ; so shall they end, and so shall they begin again ; according to the ordainer of order, and mystical mathematics of the city of heaven."

Young exclaims, in "*Night Thoughts*, " How much is to be done ! " so one might exclaim in reference to the contents of this monthly,

"How much is to be answered!" Yea, the laborers are few compared to the readers. "Search all *writings*," for wisdom. Write out the facts, as James O'Connell puts it, "biographically, empirically, scholastically, philosophically, or scientifically," and forward the desired information.

Carlyle has left the following remark, as the key of all past time:

"In books lies the soul of all past time — the articulate, audible voice of the past, when the body and the material substance of it has altogether vanished like a dream. No magic *Rune* is stranger than a book. All that mankind has done, thought, gained or been, is lying in magic preservation in the pages of books. Do not books still accomplish miracles as *Runes* were fabled to do? They persuade men."

Many books are old friends whose memories long cling to the heart. Thomas Moore has beautifully expressed their memories in his poem entitled *Farewell*:

"Long, long be my heart with such memories filled,  
Like the vase in which roses have once been distilled;  
You may break, you may shatter the vase if you will,  
But the scent of the roses will cling round it still."

*S. C. & L. M. Gould.*

MANCHESTER, N. H., December, 1889.

### *Unanswered Questions in Vol. VI.*

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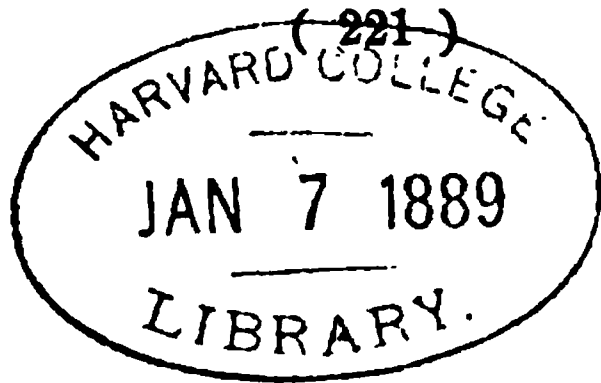
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MISCELLANEOUS

# NOTES AND QUERIES,

WITH ANSWERS.

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VOL. VI.

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No. 1.

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*"Yew, those who know virtue are few."*—CONFUCIUS.

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## *Remarks.*

Only a few words are necessary at the beginning of this volume. It is sometimes a hard task to steer between Scylla and Charybdis. One desires more articles on folk-lore and less on science, while another says those on science in general are too abstruse; several more announce that they are studying the ancient religions, having been drawn to them by the many references to, and quotations from, them in these pages.

A more than ordinary interest has been awakened in arcane subjects, remarkable phenomena, fantastical literature, bibliography, and so forth; and many questions have been received on these singular matters, which will appear in the current volume.

As fantastic as many of these subjects seem to be, they lie at the foundation of nearly all secret societies and religious systems; and the literature of this age is bringing to light much that has been hidden for ages. "Let there be light." Go on and light will come you.

A very copious index to these entire volumes has been prepared by Albert R. Frey, New York, an experienced indexer, which we design to publish the present year in pamphlet form, in uniform size with NOTES AND QUERIES, thus giving to all those who possess the full set a quick reference to all matters therein.

**TOUR OF THE CHESS KNIGHT.** (Vol. V, p. 212.) This subject has been discussed in these pages (Vol. II, pp. 397, 473). According to the *Pródromus* in the bibliography appended to S. S. Haldeman's "Tours of a Chess Knight," the earliest attempt to form a knight's tour, accompanied by a definite date, seems to be that of a manuscript by Paulus Guerinus in 1512, and fills only half the board. Gianutio in 1597 also performed the tour on half the board, but as his can be inverted on the other half of the board and properly connected, he essentially solved the problem. Since 1597 many others have performed the tour in different ways, among them several of the noted mathematicians of Europe. When the tours are lined they form very elegant designs, and are easily distinguished from each other.

The following is a six-line quotation from Shakespeare. Each syllable occupies a square, and follows in succession according to the knight's move on the chess board. What is the quotation, and where is it found in Shakespeare's works?

on	heav	per	ð	seek	te	is	to
a	ex	the	ous	nish	let	to	beau
en	fume	of	cess	vi	the	smooth	waste
lous	throw	the	gar	eye	light	gild	ice
rain	to	cu	gold	to	the	ful	per
to	to	li	o	with	ed	or	re
the	bow	hue	di	to	an	ta	and
un	ly	paint	or	ther	ri	fin	add

S. S. Halderman's "Tours of the Chess Knight" contains 114 diagrams; and his bibliography on the subject names 64 authors and articles (1500-1864), with 34 diagrams. Total pages 132. "Dedicate to GEORGE ALLEN author of a life of Philidor."

George Walker's bibliography, appended to *The Philidorian*, a magazine of chess and other scientific games, contains 40 octavo pages, including 420 authors and articles, down to 1838.

M. J. Hazeltine, a chess editor of New Hampshire, has a fine library on chess, containing 340 volumes, 200 pictures, prints, and photographs; 7,705 problems, 4,004 enigmas, 9,295 games; the three latter items displayed on 10,276 pages.

Dr. A. Vander Linde's bibliography, recently published at Utrecht, contains 2,209 titles, besides 113 titles on checkers.

YEAR OF CONFUSION. (Vol. II, p. 527.) This phrase was applied to the reformation of the calendar undertaken by Julius Cæsar, which reform was a great improvement on the previous calendar. Cæsar called on Sosigenes, an astronomer, to rectify the discrepancy, that is, adjust the difference between the the civil and solar year, to prevent future errors. It was determined to make January 1 of the Roman year A. U. C. (*Anno Urbis Conditæ*) 709, which was B. C. 45, coincide with January 1 of the solar year. Two intercalary months of 67 days were inserted between the last day of November and the first day of December of the year A. U. C. 708. An intercalary month of 23 days had already been added to February of that year. Hence, the Roman year A. U. C. 709 was made to consist of 445 days (i. e.  $355 + 23 + 67 = 445$ ). That year was scoffingly called "the year of confusion," or more justly it should be named, as Microbius observes, "the last year of confusion." To prevent future errors the year was lengthened from 355 to 365 days, each month except February being lengthened by one or two days, nearly alternately, according to the rule we now observe. The Gregorian calendar obviated an error in the Julian calendar by not making every fourth century a leap year. Gregory XIII ordered that every fourth century beginning with 2000 should not be a leap year, which obviates all errors for many centuries to come.



*The Greatest Magic Square Extant.*

BY WILLIAM BEVERLY.

In view of the great interest that is manifested in that mysterious subject, the magic square, we present what is probably the finest and the most perfect example, extant. It was made by the most distinguished chess-player of England.

260	260	260	260	260	260	260	260	= 2080
1	30	47	52	5	28	43	54	= 260
48	51	2	29	44	53	6	27	= 260
31	46	49	4	25	8	55	42	= 260
50	3	32	45	56	41	26	7	= 260
33	62	15	20	9	24	39	58	= 260
16	19	34	61	40	57	10	23	= 260
63	14	17	36	21	12	59	38	= 260
18	35	64	13	60	37	22	11	= 260

This square illustrates the Knight's Tour over the chess-board, in the game of chess, in which the knight plays to every square on the board, and touches it but once.

Every line of figures running up and down sums up 260.

Every line of figures running right and left sums up 260.

Divide the board into four quarters; then the rows and files of each quarter will sum up 130.

Divide the board into sixteen equal parts; the numbers that compose each sixteenth part will sum up 130.

It also follows that any sixteenth portion of the board, added to any other sixteenth portion, will sum up 260.

It also follows that any half row or file, added to any other half row or file, in the entire square, will sum up 260.

Take the files of numbers running up and down ; the four central numbers of the file will sum up 130 ; and so of course the four remaining or outer numbers will sum up 130.

These are only some of the wonderful properties of this mysterious square. This is really a *magic square* ; and in comparison, the ordinary square by this name sinks into insignificance.

MULTIPLICATION OF ROMAN NUMERALS. How did the ancients perform multiplication before the invention of the Arabic figures?

EGBERT LORD.

This question has waited a year for a reply. We will give an example, that of multiplying 1791 by 53, taken from an unpublished letter of Baron Maseres to the Rev. William Birche, in the possession of J. O. Hallowell, Esq., Jesus College, Cambridge, England. See Thomas S. Davies' "Solutions to Charles Hutton's Course of Mathematics," 1840, p. 5. It is as follows :

$$\begin{aligned}
 &1791 \text{ is MDCCXCI, and } 53 \text{ is LIII. Therefore, } 1791 \times 53 \text{ is} \\
 &= \text{MDCCXCI} \times \text{LIII} \\
 &= \text{LIII} \times \text{M} + \text{LIII} \times \text{D} + \text{LIII} \times \text{CC} + \text{LIII} \times \text{XC} + \text{LIII} \times \text{I} \\
 &= \text{LIII} \times \text{M} + \text{XXVI} \times \text{M} + \text{I} \times \text{D} + \text{L} \times \text{CC} + \text{III} \times \text{CC} + \text{LIII} \times \text{L} \\
 &\quad + \text{LIII} \times \text{XL} + \text{LIII} \\
 &= \text{LXXVIII} \times \text{M} + \text{D} + (\text{L} \div \text{D}) \times \text{X} \times \text{CC} + \text{DC} + \text{XXVI} \times \text{C} + \text{I} \\
 &\quad \times \text{L} + \text{LII} \times \text{XL} + \text{I} \times \text{XL} + \text{LIII} \\
 &= \text{LXXVIII} \times \text{M} + \text{D} + \text{V} \times \text{II} \times \text{M} + \text{DC} + \text{XXVI} \times \text{C} + \text{L} + \text{CIV} \\
 &\quad \times \text{XX} + \text{XL} + \text{LIII} \\
 &= \text{LXXVIII} \times \text{M} + \text{D} + \text{X} \times \text{M} + \text{DC} + \text{XX} \times \text{C} + \text{VI} \times \text{C} + \text{L} + \text{C} \\
 &\quad \times \text{XX} + \text{IV} \times \text{XX} + \text{XL} + \text{LIII} \\
 &= \text{LXXXVIII} \times \text{M} + \text{MC} + \text{II} \times \text{M} + \text{VI} \times \text{C} + \text{L} + \text{II} \times \text{M} \\
 &\quad + \text{LXXX} + \text{XL} + \text{LIII} \\
 &= \text{LXXXIV} \times \text{M} + \text{VII} \times \text{C} + \text{L} + \text{CXX} + \text{LIII} \\
 &= \text{LXXXIV} \times \text{M} + \text{VIII} \times \text{C} + \text{L} + \text{XX} + \text{LIII} \\
 &= \text{LXXXIV} \times \text{M} + \text{IX} \times \text{C} + \text{XXIII} \\
 &= \text{LXXXIV} \times \text{M} + \text{DCCCC} + \text{XXIII} \\
 &= \text{XCIV} \times \text{M} + \text{DCCCC} + \text{XXIII} \\
 &= 94923
 \end{aligned}$$

*Query* : Whether this is the way in which Cicero or Varro would have multiplied 1791 by 53.

THE FIRST BAND OF MINSTRELS ever formed consisted of four persons : Dan. Emmett, Wm. Pell, Frank Brower, and Wm. Whitlock. They performed in New York in 1842.

### *The Sentence of Jesus.*

A COPY OF THE ORIGINAL DECREE AS ISSUED BY PONTIUS PILATE.

A correspondent of *Notes and Queries*, London, extracts from the *Kölnische Zeitung* what is called "correct transcript of the sentence of death pronounced against Jesus Christ." The following is a copy of the most remarkable judicial sentence which has ever been pronounced in the annals of the world ; namely, that of death against the Saviour, with the remarks that the journal *Le Droit* has collected, the knowledge of which must be interesting in the highest degree to every Christian. Until now we are not aware that it has ever been made public in the German papers. The sentence is word for word as follows :

SENTENCE PRONOUNCED BY PONTIUS PILATE, INTENDANT OF THE PROVINCE OF LOWER GALILEE, THAT JESUS OF NAZARETH SHALL SUFFER DEATH BY THE CROSS. IN THE SEVENTEENTH YEAR OF THE REIGN OF THE EMPEROR TIBERIUS AND ON THE 25TH OF THE MONTH OF MARCH, IN THE MOST HOLY CITY OF JERUSALEM, DURING THE PONTIFICATE OF ANNAS AND CAIAPHAS, PONTIUS PILATE, INTENDANT OF THE PROVINCE OF LOWER GALILEE, SITTING IN JUDGMENT IN THE PRESIDENTIAL SEAT OF THE PRÆTORS, SENTENCES JESUS CHRIST OF NAZARETH TO DEATH ON A CROSS BETWEEN TWO ROBBERS, AS THE NUMEROUS AND NOTORIOUS TESTIMONIALS OF THE PEOPLE PROVE :

1. JESUS IS A MISLEADER.
2. HE HAS EXCITED THE PEOPLE TO SEDITION.
3. HE IS AN ENEMY TO THE LAWS.
4. HE CALLS HIMSELF THE SON OF GOD.
5. HE CALLS HIMSELF FALSELY THE KING OF ISRAEL.
6. HE WENT INTO THE TEMPLE FOLLOWED BY A MULTITUDE CARRYING PALMS IN THEIR HANDS.

ORDERS : THE FIRST CENTURION, QUINTUS CORNELIUS, TO BRING HIM TO THE PLACE OF EXECUTION, FORBIDS ALL PERSONS, RICH OR POOR, TO PREVENT THE EXECUTION OF JESUS. THE WITNESSES WHO SIGNED THE EXECUTION AGAINST JESUS ARE :

- |                             |                    |
|-----------------------------|--------------------|
| 1. DANIEL ROBANI, PHARISEE, | 3. RAPHAEL ROBANI, |
| 2. JOHN ZOROBABEL,          | 4. CAPET.          |

JESUS TO BE TAKEN OUT OF JERUSALEM THROUGH THE GATE TOURNEA.

The sentence is engraved on a plate of brass in the Hebrew language, and on its sides are the following words :

"A SIMILAR PLATE HAS BEEN SENT TO EACH TRIBE."

It was discovered in the year 1620 in the city of Aquill (Aquila) ?

in the kingdom of Naples, by a search made for the discovery of Roman antiquities, and remained there until it was found by the Commissaries of Art in the French Army of Italy. Up to the time of the campaign in southern Italy, it was preserved in the sacristy of the Carthusians, near Naples, where it was kept in a box of ebony. Since then the relic has been kept in the chapel of Caserta. The Carthusians obtained it by their petitions that the plate might be kept by them, which was an acknowledgment of the sacrifices which they make for the French Army. The French translation was made literally by members of the Commission of Arts. Denon had a fac-simile of the plate engraved, which was bought by Lord Howard on the sale of his cabinet for 2000 francs. There seems to be no historical doubt as to the authenticity of this. The reasons of the sentence correspond exactly with those of the Gospels.

WERE THERE TWO CHRISTMASES OR ONE IN 1753? Nathaniel Ames's Astronomical Diary or Almanac for 1752 gives that year 366 days, while the English almanacs give that year 355 days. New Englanders did not seem to obey the Act of Parliament, changing from old style to new style, throwing out 11 days from the year 1752, in this manner: the 3d of September was called the 14th, thus reducing that month to 19 days. Ames makes no such change, but gives each month its usual quota of days. But in his almanac for 1753, he says the year begins on Monday, which answers to the 21st of December, 1752, thus knocking out the 11 last days of December. It would be interesting to me to know whether in reality the New Englanders had any Christmas in 1752. According to their own almanacs their Christmas for 1752 came on the 5th of January, 1753. This would give them two Christmas festivals in the year 1753—January 5th and December 25th.

T. P. S.

SOLOMON'S TEMPLE. When Reginald Heber read his prose poem of *Palestine* to Sir Walter Scott, the latter observed that, in the verses on Solomon's Temple, one striking circumstance had escaped him; namely, no tool of iron was used in its erection. Heber retired for a few minutes to the corner of the room, and returned with these beautiful lines:

"No hammer fell, no ponderous axes rung;  
Like some tall palm, the mystic fabric sprung.  
Majestic silence!"

## Questions and Answers.

—•••—

THE TWELVE IMAMS—THE MAHDI. (Vol. V, p. 211.) The word *Imâm* literally means "the chief," or "the guide." The word *Mahdi* literally means "he who is led," or "the well-guided one." The fundamental idea of Islamism is the incapability of man to guide himself, or to find the truth, or right path, and that to ignorant man God sends now and then a prophet who is inspired with knowledge and to whom is revealed what ought to be done. God dictates to him and makes him his mouthpiece, and hence he is "the well-guide one"—*the Mahdi par excellence*, who is also to end the drama of the world. Islamism teaches that there have been six prophets — Adam, Noah, Abraham, Moses, Jesus, Mohammed — and that there were to be twelve *imâms*, the last one being Ahmed Mohammed the *Madhi* of 1884. Their names as given in the "The Asian Mystery," by Rev. Samuel Lynde, are as follows :

- |   |                            |
|---|----------------------------|
| 1. Mohammed, the chosen.  | 7. Moses, the patient.     |
| 2. Hossum, the elected.   | 8. Ali, the accepted.      |
| 3. Hosein, the martyr.  | 9. Mohammed, the generous. |
| 4. Ali, the ornament,   | 10. Ali, the director.     |
| 5. Mohammed, the investigator.  | 11. Hassan, the Askeree.   |
| 6. Djafar, the just.  | and                        |
| 12. Mohammed, the son of Hassan, the demonstration, the chief, the director, the preacher, the warner, the hoped for, the expected, the lord of the age and time. |                            |

Mr Lynde's "Asian Mystery" was published in London, in 1860, which would make the 12th *Mahdi*, or he of 1884, about 28 years of age or under. His first proclamation addressed to the population of Arabia, is found in the *Daily Telegraph*, London, Jan. 29, 1885, as follows :

"Before God and the Prophet, I declare that I did not take up the sword to found a kingdom on earth, or to gather treasures for myself or live in a fine palace ; but to bring consolation and succour to the faithful ; to deliver them from bondage ; and in order that the reign should shine forth once more in its ancient splendor. I am therefore resolved to advance from Khartoum on Dongola, Cairo, and Alexandria, and in each of those cities to hand over the power and government to the Moslems. I shall march from Egypt to the land of the Prophet, to drive out the Turks, who govern no better than the unbelievers, and I shall transfer the country, with its two holy towns, to the sons of Ismael. Be assured, O ye sons of Ismael ! that in a little time I will be with you, sword in hand."

REPEATING DECIMALS FROM A SERIES. (Vol. V, p. 180.) "A TYRO" asks whether  $\pi$ , or any decimal obtained from a series, could commence to repeat if carried out far enough? This all depends whether the decimal in question happens to be a commensurable quantity. The mere fact of its being calculated from a series does not signify. Thus,  $\frac{1}{10} + (\frac{1}{10})^2 + (\frac{1}{10})^3 + (\frac{1}{10})^4 + \text{etc.}, \text{ ad infinitum}$ , is a series that is commensurable; its sum can be found like that of other geometrical series. The sum is  $\frac{1}{9}$ ; and  $\frac{1}{9}$  is commensurable—that is, it is a fixed, definite amount. It is also a repeater when expressed in decimals, because the denominator contains a prime factor which is neither 2 nor 5.  $\frac{1}{2} + (\frac{1}{2})^2 + (\frac{1}{2})^3 + (\frac{1}{2})^4 + \text{etc.}, \text{ ad infinitum}$ , is another series that has a commensurable sum, namely, 1. But when a quantity can be proved to be *incommensurable*, then it cannot be expressed either as a terminating or as a repeating decimal; for all terminating and repeating decimals can be expressed as vulgar fractions; and all vulgar fractions are commensurable. To explain this let us take an *incommensurable* quantity:  $\sqrt{2}$  for instance. All square roots of integers, excepting those integers that are square numbers (*e. g.* 1, 4, 9, 16, 25), are incommensurable. For a decimal multiplied by itself must produce a decimal—never an exact integer. Now supposing for the sake of argument it were possible to express  $\sqrt{2}$  by a repeating decimal, it would follow that the  $\sqrt{2}$  could be expressed as a vulgar fraction. But this would be impossible, for no vulgar fraction multiplied by itself would produce 2. Hence we see that an incommensurable quantity like  $\sqrt{2}$ , could not be expressed by a repeating decimal. It has been proved that  $\pi$  is also *incommensurable*; consequently,  $\pi$  cannot be expressed as a repeating decimal, or as a vulgar fraction, or in any other commensurable form. We have to be content with an approximation, just as we have to be in regard to square roots.

With respect to constants that have not been *proved* to be incommensurable, the reply is, until they have actually been proved incommensurable, there will always remain a doubt on the point. If incommensurable, the decimal figures will neither terminate nor repeat; if commensurable, on the other hand, they would, if carried out far enough, either begin to repeat, or come to an end.

T. S. BARRETT, New Athenæum Club, London.

Sacrum pingue dabo non macrum sacrificabo.—*Gen.* IV, 4.  
Sacrificabo macrum non dabo pingue sacrum.—*Gen.* IV, 3.

**JOB'S HOUSEHOLD.** (Vol. V, p. 212.) We are informed that Job's household, was as follows :

Job 1, 2-3.		Job XLII, 12-13.	
Sheep,	7,000	Sheep,	14,000
Camels,	3,000	Camels	6,000
Yokes of oxen,	500	Yokes of oxen,	1,000
She asses	500	She asses,	1,000
Sons,	7	"Also," Sons,	7
Daughters,	3	"Also," Daughters,	3

Does the "also," in XLII, 13, give us to understand that his children were doubled, and that he had 14 sons and 6 daughters? X.

Coleridge substantially answers this question in an epigram found among his papers, as follows :

"Sly Beelzebub took all occasions  
To try Job's constancy and patience ;  
He took his honors, took his health,  
He took his children, took his wealth ;  
His camels, horses, asses, cows—  
Still the sly devil did not take his spouse.

But Heaven, that brings good out of evil,  
And likes to disappoint the Devil,  
Had predetermined to restore  
Two-fold of all Job had before ;  
His children, camels, asses, cows—  
Short-sighted Devil not to take his spouse."

Another anonymous author puts the same episode into another form :

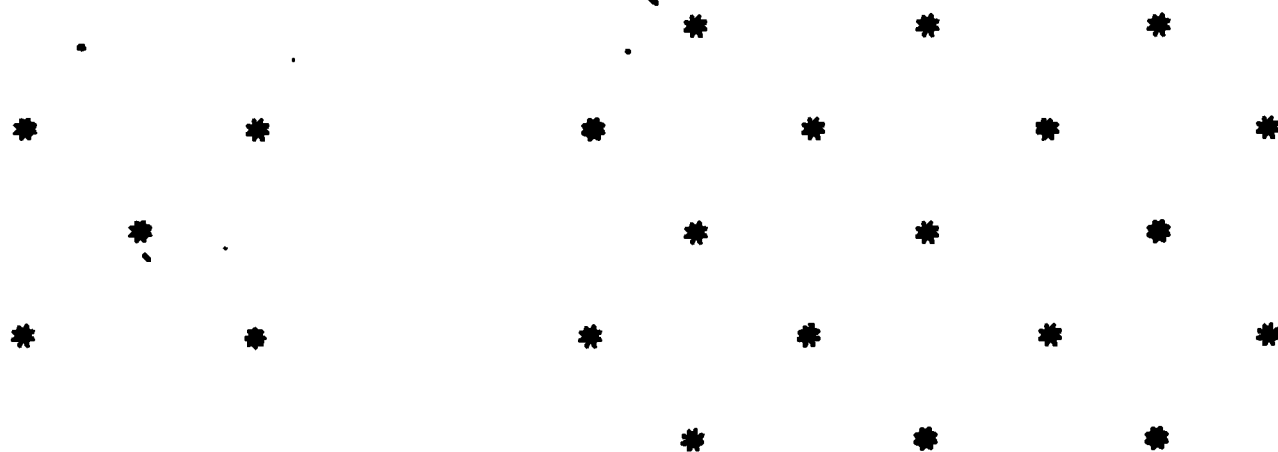
"The Devil engaged with Job's patience to battle,  
Tooth and nail strove to worry him out of his life ;  
He robbed him of children, slaves, houses, and cattle,  
But, mark me, he ne'er thought of taking his wife.

But Heaven at length Job's forbearance rewards ;  
At length double wealth, double honor arrives ;  
He doubles his children, slaves, houses, and herds,  
But we don't hear a word of a couple of wives."

**MEANING OF THE WORD "PISCATAQUOG."** (Vol. V, pp. 96, 141.) My attention has been called to the meaning of "Piscataquog," as given in the NOTES AND QUERIES for August, 1888. This name was first applied to a river in New Hampshire, consequently we must look for a signification that would be descriptive of some part of the stream. Piscataqua or Piscataquog (N. H.) is the equivalent of Pachgatcock (Conn.), Piscataway (N.J. and Md.), and probably Pasquotauk (N. C.), signifying "the confluence of two streams," more exactly, "the place where a river branches or divides," at the branch. See Trumbull's "Indian Names in Connecticut."

WM. WALLACE TOOKER, Sag Harbor, N. Y.

**THE QUINCUNX ORDER.** (Vol. V, p. 312.) Webster says the word *quincunx* is from *quinque*, five, and *uncia*, ounce. Brande says it is that disposition of five objects in which they are made to occupy the four corners and point of intersection of the diagonals of a square, as :



The word is extended to any number of things so arranged in lines that the members of each succeeding line shall stand behind the spaces of those of the preceding one as shown above.

**NUMERAL PALINDROMES.** (Vol. II, p. 600.) The thought occurred to me, after reading the palindromes in *NOTES AND QUERIES*, that such might be found among the natural powers of numbers; and an hour's examination of a table of squares and cubes reveals some singular combinations :

$11^2 =$	121	$11^3 =$	1331
$22^2$	484	$101^3$	1030301
$101^2$	10201	$111^3$	1367631
$111^2$	12321	$1001^3$	1003003001
$121^2$	14641		
$264^2$	69696	$12^2 =$	144
$836^2$	698896	$21^2$	441
$1111^2$	1234321	$13^2$	169
		$31^2$	961

$$111^3 = 1367631$$

$$1111^2 = 1234321$$

$$1^2 + 3^2 + 6^2 + 7^2 + 6^2 + 3^2 + 1^2 = 141$$

$$1^2 + 2^2 + 3^2 + 4^2 + 3^2 + 2^2 + 1^2 = 44$$

HULDAH B. BENSON.

**THE TWELVES.** (Vol. V, pp. 150-153.) In the scheme of twelve as given in the September number, 1888, the names of the "Twelve Gates," are not given. Where can they be found? JACOB.

The names of the 12 gates of the ancient Jerusalem are given by Vilalpand, in his *Apparatus Urbis et Templi*, tome iii, as follows :

- |               |             |              |               |
|---------------|-------------|--------------|---------------|
| 1. Fontis,    | 4. Anguli,  | 7. Piscium,  | 10. Equarum,  |
| 2. Stercoris, | 5. Ephraim, | 8. Benjamin, | 11. Aquarum,  |
| 3. Vallis,    | 6. Vetus,   | 9. Gregis,   | 12. Fiscalis. |



*Revelation of Joseph Hoag of Vermont, in 1803.*  
—•—

Joseph Hoag of Vermont, an eminent minister of the Society of Friends, published in 1807 the vision he received four years previously while alone in the field. It is considered by many to have been a prediction of the then future course of events, as they were to occur in the history of our country and the final fate of the United States.

The actor in this remarkable scene was a man of high and unblemished character. The old records speak of him as a man of great ability and sterling common sense, and unbiased by superstition. There was no stain to mar the brightness of his record, and he was universally respected by the Society of Friends, and other people.

At midday, while working in the fields of the old Green Mountain State, this worthy man witnessed things as wonderful as John, the Revelator, saw at the Isle of Patmos, and recorded them for the guidance of posterity. We here present the strange and mysterious manuscript to the world, in the indetical words of the original, just as he wrote it. Its style is after the quaint Quaker forms, he using no superfluous phrases :

*(The original manuscript.)*

*A Vision From Heaven.*  
—•—

---

 $\left\{ \begin{array}{c} \text{a} \\ \text{a} \end{array} \right\}$ 


---

Y

,17

Q

---

 $\left\{ \begin{array}{c} | 3 | \end{array} \right\}$ 


---

In the year 1803, in the 8th or 9th month, I was one day alone in the field, and observed the sun shown clear, but a mist eclipsed its brightness. As I reflected on the singularity of the event, my mind was struck into silence, the most solemn I ever witnessed, for all my faculties were low and unusually brought into deep silence. I said to myself, "What can this all mean?" I do not recollect ever before to have been sensible of such feelings. I heard a voice from heaven, say :

"This which dims the brightness of the sun, is a sign of present and coming times. I took the forefathers of this country from a land of oppression. I planted them here among the people of the forest. I sustained them, and while they were humble I blessed them and they became a numerous people. But now they have become proud and lifted up, they have forgotten me, who nourished and protected them

in the wilderness, are running into every abominable and evil propensity of which the old countries are guilty, and have taken quietude from the land and suffered a dividing spirit to come among them. Lift up thine eyes and behold."

I saw them dividing in great heat. This division began in the churches. It commenced in the Presbyterian Society and went through the various religious denominations, in its progress and closed. Those that dissented went off with high heads and taunting language, and those who kept in their original sentiments appeared exercised and sorrowful; and when the dividing spirit entered the Society of Friends it raged in as high degree as in any I had before discovered. As before, those who kept to their ancient principles retired by themselves. It appeared in lodges of Freemasons, where it broke out in appearance like a volcano, inasmuch as it set the country in an uproar for a length of time. Then it entered politics in the United States, and did not stop until it produced a civil war, and abundance of human blood was shed in the course of the combat; the Southern States lost their power, and slavery was annihilated from their borders. Then a monarchical power arose and took the government of the United States, established a national religion, and made all the people tributary to support its expenses. I saw them take property from Friends to a large amount. I was amazed at beholding all this; when I heard a voice proclaim:

"This power shall not always stand, but with it I shall chastise my church until they return to the faithfulness of their forefathers. Thou seest what is coming on thy native land for all its iniquities, and the blood of Africans, the remembrance of which has come up before me. This vision is yet for many days."

I had no idea of writing it for many years, until it became such a burden, that for my own relief I have written it.

Burlington, Vt., 1807, 4 mo., 17 day.

JOSEPH HOAG.

The above also appeared in the Philadelphia *News* many years ago, and has been printed as a broadside occasionally for distribution to such as are interested in prophetic literature. While the greater portion of it has been literally fulfilled, it now remains to be seen whether the United states is to become a monarchical power, and a national religion to prevail.

Joseph Hoag was born in 1762, and died in 1846, in his 85th year. He would have gone to the stake for his principles, from which no Elias Hicks, Joseph John Gurney, nor others could turn him. His life and teachings are published in an octavo volume of 389 pages, "A Memoir of the Life of Joseph Hoag, an Eminent Minister of the Gospel in the Society of Friends." His motto is found in Revelation xiv, 13. Auburn, 1861.

REMARKABLE COINCIDENCES. (Vol. V, p. 312.) Some of the remarkable coincidences that have been taken note of may be mentioned as follows :

Edo Neuhaus says it is a fact which historians have averted to that great importance attaches to some names. For instance, the name and *ordinal* assumed by many of the Popes on their accession to the chair of Peter, has in many cases been an omen or prognostic of the number of years during which their life and dignity were destined to last.

	Raised.	Died.		Raised.	Died.
Alexander II,	1061	1063	Leo X,	1513	1523
Clement III,	1187	1190	Gregory XIII,	1572	1585
Victor IV,	1138	1142	Sxetus V,	1585	1590
Pius V,	1566	1571			

By a similar fate, Benedict II, Sextus II, Anastasius II, Joannes II, Martinus II, Nicolaus II, each died in the second year of the imperial dignity of the individual who at the time occupied the throne of the Cæsars.

So, also, Stephen III, Martinus III, Clemens III, Nicolaus III; Felix IV, Martinus IV, Nicolaus IV, Paul IV, Benedict IV, Clement IV; Boniface V; Innocent VIII, each died in the year succeeding, as indicated by the ordinals, while in possession of sovereign authority as emperors of Germany.

These deaths occurred as coincidences, according to the general acceptance of the word; while some believe them to be ominous.

Louis Philippe ascended the throne,	1830
The date of his birth was 1773, added 1+7+7+3	18 = 1848
The birth of the queen was 1782, added the same,	18 = 1848
Their marriage was in 1809, added the same,	18 = 1848
Louis Phillipe abdicated the throne,	1848

Louis Napoleon was proclaimed emperor,	1852
The date of his birth was 1808, added 1+8+0+8	17 = 1869
The birth of the empress was 1826, added the same,	17 = 1869
Their marriage was in 1853, added the same,	17 = 1869

William Shakespeare, born April 23, 1564; died April 23, 1616; age, 52 years.

John Adams, second president, and Thomas Jefferson, third president of the United States, both died July 4, 1826, aged 91 years and 83 years respectively.

## P R O B L E M S .

1. The recently published work, "The Secret Doctrine," by H. P. Blavatsky, Vol. I, p. XLVI of the introduction, says there still exists, somewhere in the archives of the French Academy, the famous law of probabilities worked out by an algebraical process for the benefit of sceptics by certain mathematicians. It is as follows :

"If two persons give their evidence to a fact, and thus impart to it each of them  $\frac{5}{8}$  of certitude, that fact will have then  $\frac{35}{8}$  of certitude ; *i. e.* its probability will bear to its improbability the ratio of 35 to 1. If three such evidences are joined together the certitude will become  $\frac{315}{8}$ . The agreement of ten persons giving each  $\frac{1}{2}$  of certitude will produce  $\frac{1023}{8}$ , etc., etc."

Are these statements correct ?

PHILOMATH.

2. A sportsman was asked how many birds he had taken, and replied :

If 5 be added to  $\frac{1}{3}$  of those I took last year, it will make  $\frac{1}{2}$  of the number I have taken this year ; but if from 3 times this last half 5 be taken, you will have the number taken last year.

How many did he take each year ?

JONAS.

3. In an old mathematical work is found the following problem :

How far did the lost spirits fall in 9 days, as stated in Milton's "Paradise Lost," Book VI, line 861 "Nine days they fell" ; and Book, IX, lines 62-69 :

"Thence, full of anguish driven,  
The space of seven continued nights he rode  
With darkness, thrice the equinoctial line  
He circled, four times crossed the car of night  
From pole to pole, traversing each colure ;  
On the eighth returned, and on the coast, averse,  
From entrance or cherubic watch, by stealth  
Found unsuspected sway."

JONAS.

4. The following problem has been proposed, but the answer has not been forthcoming :

Suppose a body move eternally in the following manner : 20 miles the first minute, 19 miles the second minute,  $19\frac{1}{10}$  miles the third, and so on in geometrical progression. What is the utmost distance it can reach ?

L. O. K.

5. A company of men and women expend at a feast 1000 francs. The men pay each 19 francs, and the women 11 francs. How many men and how many women are there ?

L. O. K.

6. A man desires to reach home exactly at 12 o'clock noon. If he travels 10 miles an hour, he arrive home 2 hours too soon ; but if he travels 6 miles an hour, he arrives home 2 hours to late. How far is he from home ?

C. C.

# QUESTIONS.

—O—O—

1. (a) What is the form of the geometrical figure called a *gnomon* ?
- (b) What is an *escribed* circle ?
- (c) Why do we say *long* and *short* ton for *greater* and *lesser* ton ?
- (d) In what book is the word *millions* first found, and where ?
- (e) Why is the Greek letter  $\epsilon$  (epsilon) used to designate the Napierian base ( $2.818281828+$ ) ?
- (f) What is *duodenal* arithmetic, and where can a treatise on it be procured ?
- (g) Where in James Ryan's *Algebra* is the pupil instructed to "complete the square" in solving equations ?
- (h) Why is the fifth power ( $2^5=32$ ) called a *sursolid* ?
- (i) Has Robert Flower's work entitled *The Superdigit*, a manuscript owned by J. O. Hallowell, ever been published ?

ELMWOOD ACADEMY.

2. (a) Why do the Anglo-Israel people call the United States of America, *Manasseh*, the half-tribe of Joseph, and are we to infer that we are, therefore, descendants of Joseph and Asenath (Gen xli, 51).

(b) What is the title of the book by Rev. Jesse H. Jones, said to have been written to prove that the United States of America is "the kingdom of heaven" already come ?

(c) What professor has recently published a work proving that the lost Paradise is situated at the North Pole.

(d) Can any reader tell me of any good work giving the theory, prophecy, plans, etc., of the return of the Jews to Jerusalem ?

ISAAC T. POLKHORN.

3. Is the the correct meaning of the word *California*, as the Latin roots indicate, *cali fornica*, "a hot furnace" ?

C. H. M.

4. Where can be found among the ancient historians the account of the fabulous story of the *phœnix* ?

WELLINGTON HOWARD.

5. A quotation from Washington Irving says of one of the Dutch governors of New York, that "he was exactly five feet six inches in height, and six feet five inches in circumference; his head was a perfect sphere, and of stupenduous dimensions." What governor was this, and when did he govern ?

AQUILLA Q. FORD.

6. Where in Massachusetts is the *Potanumaqunt* Harbor, mentioned in connection with the loss of the Sparrow-Hawk wrecked in 1626 ?

AUGUSTUS.

7. Where can a catalogue of the names of the F. F. V's. (First Families of Virginia) be found ?

V.

8. Is the name *Phillipi* the plural of Phillipus ? Who were the Phillipides ? Why do the Spanish spell Philip *Felipe* ?

V.

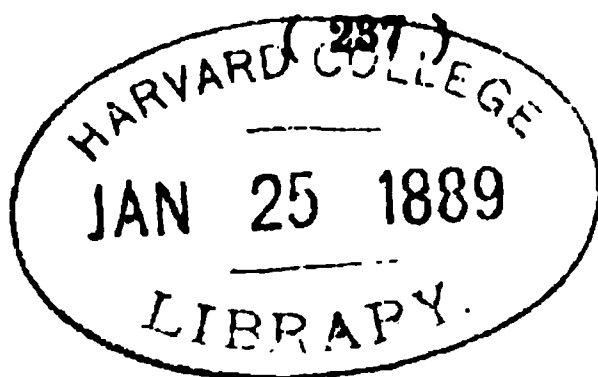












MISCELLANEOUS.

# NOTES AND QUERIES,

WITH ANSWERS.

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*"Stand out from between me and the Sun."* — **DIOGENES.**

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**ERRONEOUS SPELLING.** S. S. Haldeman, in his work on "Penn Dutch," took from the file of a native druggist the names of certain drugs called for, viz. :

Allaways, Barrickgorrick, Sider in de ment, Essig of Iseck, Hiram Packer, Cinment, Cienwepper, Sension, Saint Cum, Opien, High Cyrap, Senoand mano misct, Sking, Coroces Suplement, Red puese-peite, Ammelime, Lockwouth, Absom's salts, Mick nisey, Corgel, Chebubs, By crematarter potash, Balderzon, Tower beans, Cots Shyned.

These properly written are as follows :

Aloes, Paregoric, Citrine ointment, Acetic acid, Hicru Picra, Cinna-mon, Guiana pepper, Gentian, Cinchona, Opium, Hive Syrup, Senna and Manna mixed, Sulphate of Zinc, Corrosive Sublimate, Red Pre-cipitate, Aniline, Logwood, Epsom Salts, Magnesia, Cordial, Cubebs, Bi-chromate of Potash, Valrieian (G. Balprian), Laurel Berries, Cochineal.

Haldeman also gives some examples of misdirected letters :

Bintgrof, Scur E. Quss, Nu Yourck Sevaber, Gandoge, Schickets Laenghaester Caunte, Burgix Caunte.

These properly spelled are :

Pinegrove, Syracuse, New York, Safe Harbor, Kentucky, Chiquis, Lancaster county, Berks county.

Druggists and postmasters who understand the dialect however, can read these examples with a good deal of ease. Many other lists could be given which are not only curious but instructive.

I. B., M. D., Oakville, Penn.

### *Coins and Medals.*

Some amusing examples of the manner in which coins and medals have been employed, in which they serve as curious mirrors of public feeling, and as permanent records of transitory passion. There is a medal, coined in the time of Joseph of Austria, bearing this inscription :

*Josephus Imperator regnat amore et timore, facit MDCCV..*

(The Emperor Josephus reigns by love and fear, which make MDCCV.)

**On the reverse is a curious cabbalistic interpretation, thus given :**

# CABBALÆ CLAVIS.

A	1	G	7	N	40	T	100
B	2	H	8	O	50	V	200
C	3	I	9	P	60	W	300
D	4	K	10	Q	70	X	400
E	5	L	20	R	80	Y	500
F	6	M	30	S	90	Z	600

The exergue, or small space beneath the base line of the “cabbalæ clavis,” contains this :

*" Sit ineffabilis, sit innumerabilis Austriæ gloria."*

(Ineffable and innumerable be Austria's glory.)

[illegible]

The date of the reform of the calendar in 1700, is curiously and variously recorded in many medals of the time. Here are some specimens which give the dates in Roman numerals :

(1) *GereChtes Lobopfer Denk Mahl.* MDCLL.

(The record of merited gratitude.)

(2) *GeenDarten CaLenDers DenkhahL.* DDDCLL.

(In remembrance of the reformation of the calendar.)

(3) *Hoert doch, wonder ! In Jahr MDCC. wusten de leuthe nicht wie alt sie waren.*

(Listen to a wonder ! In the year 1700 people did not know how old they were.)

One medal portrays a boy asking an old man his age ; and the answer is *Nescio* (I know not). Other medals have these :

(1) *Wo sind wir ?*

(Where are we ?)

(2)

*Ey was wonder !  
MDCC. sind de noch nicht herunter  
Wers nicht glaubet lieber herr  
Bleibt ein 99-er.*

*What a wonder !  
MDCC. has not knock'd under !  
Who won't believe it, my dear sir,  
Is a 99-er. (Is a ninety and nine.)*

There is a medal struck at Ostend, one side of which exhibits a map of the neighborhood of Helvoetsluys, and the other a battle between the Spaniards and the Flemings at the taking of Ostends, with this inscription in Greek :

*CHRYSEA CHALKEION.*

(Gold and copper.)

Here is this chronogram in Latin :

*Itane fLanDrIaM LIberas Iber.* MDLLIIII.

(Is it thus, Spaniard ! thou freest Flanders ?)

Another medal has the following to celebrate the Peace of 1678.

*a DoMIno VenIens popVLIs paX Læta refVLget.* MDLLXVWIII.

(Peace, which is the gift of heaven, brings gladness to the people.)

There is a medal of William III containing the names of all the British sovereigns, with the date of their succession to the throne, and

that of their deaths, from Egbert A. D. 801, with this inscription in Dutch :

" These comb to the terone  
With septer and crown  
But none were more glorious,  
And none more victorious,  
That ever we heard,  
Than William the Third."

At the rupture of the treaty of Ryswyck this appeared on medals :

*Auvey ! der fried hat shon en loch 1702.*

(Alas ! there is always a hole in the peace.)

On the reverse :

*Auvey ! auvey ! auvey ! auvey !  
Ryswykscher Fried is gar entzwei.*

(O woe ! O woe ! O woe ! O woe !  
The Ryswyk peace is torn in two.)

ELIOT'S INDIAN BIBLE. A description of this quaint bibliograph has been published in a Boston paper. It is in the Nipmuck language, and some of the words would try the skill of a compositor, who generally professes to be able to decipher and spell anything in any known or unknown tongue. We will give a short resumé of this specimen of *Indianana* with some extracts from the book :

The ancient book is in quarto form, rough and rusty with old age, and hallowed by old associations. The language in which it is written is dead, entirely dead ; no man living can either read it or speak it. The book was printed in 1635. The quality of the paper is poor enough, and the type is uneven and unsightly. The title-page seems to have been cut with a pen-knife for the occasion. It is bound in sheep, with heavy ribs on the back. The illuminations at the beginning are extremely rude, and the lines are bent and broken.

The longest word found in this Bible is in Mark 1, 40 :

" WUTTEPPESITTUKQGSSUNNOOWEHTUNKRUOH" (*Kneeling down to him*).

In translating Judges v, 28, " The mother of Sisera looked out at a window and cried through the lattice," he asked the Indians for the word " lattice," and found, when his translation was completed, that he had written, " and *cried through the eel-pot*," that being the only object which the natives knew as corresponding with the object Mr. Eliot described to them.

The Psalms are translated into that form of verse which is termed in our hymn-books " common metre," and nothing can be more clumsy and uncouth than the structure of the rhymes. Sternhold and Hopkins even may be read with exquisite pleasure after perusing a few

stanzas like the following, which are from the 19th Psalm, "The Heavens declare the glory of God," etc.

1. " Kesuk kukootomuhteaumoo  
God wussohsumoonk  
Mamahchekeenk wunnahtuhkon  
Wutanakaunsnonk
2. Hohsekoen kesukodtash  
Kuttoo waantamonk  
Kah hohsekoe nukonash  
Keketookon wahteauonk "

The first edition of this Bible was published in 1663. The type was set by an Indian, and it was three years in going through the press. It is the first edition of the Bible ever published in America.

MONARCHS AND PRESIDENTS OF THE PRINCIPAL COUNTRIES OF THE WORLD. The following table is appropriate for reference :

	Age.	Accession.
William III, of Netherlands, . . . . .	71	1849
Christian IX, of Denmark, . . . . .	70	1863
Victoria, of England, . . . . .	69	1837
Peter II, of Brazil, . . . . .	63	1831
Nasser ed Deen, of Persia, . . . . .	60	1848
Francis Joseph, of Austria, . . . . .	59	1848
Oscar II, of Sweden, . . . . .	59	1872
Frederick III, of Germany, . . . . .	56	1888
David Kalakaua, of Hawaii, . . . . .	53	1874
Grover Cleveland, President of the United States, . . . . .	51	1885
Sadi-Carnot, President of France, . . . . .	49	1887
Alexander III, of Russia, . . . . .	44	1881
Humbert, of Italy, . . . . .	44	1878
Mutsuhito, of Japan, . . . . .	39	1867
Kuang Su, of China, . . . . .	17	1875
Alphonso XIII, of Spain, . . . . .	2	1886

"THE SUM OF TWO NUMBERS IS EQUAL TO THEIR PRODUCT." (Vol. V, p. 206.) While there are no other *whole* numbers than 2 and 2, there are an infinite number of "answers."

$$x + y = xy, \text{ transpose}$$

$$xy - x = y, \text{ or } (y - 1)x = y$$

$$x = \frac{y}{y - 1} \text{ in which } y \text{ may be any number; so that if}$$

$$y = 2, 3, 4, 5, 6, 7, \text{ \&c.},$$

$$x = 2, \frac{3}{2}, \frac{4}{3}, \frac{5}{4}, \frac{6}{5}, \frac{7}{6}, \text{ \&c.}$$

In words, *any* number may be one of them and *that number* divided by *one less* will be the other.

J. H. D.

## QUESTIONS AND ANSWERS.

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**PATERNOSTER ROW.** (Vol. V, p. 163.) "Paternoster Row" was so named from the rosary, or pater-noster makers. We read of "one Robert Nickle, a pater-noster maker, and citizen, in the reign of Henry IV." While other accounts say it is so named because funeral processions, on their way to St. Paul's, began their pater-noster at the beginning of the Row, and went on repeating it till they reached the church-yard gate.

R., Philadelphia, Penn.

**THE ISMAELITES.** From whom do the Mohammedans claim descendency, and why called *Ismaelites* ?

INQUIRER II.

According to Washington Irving, in his "Life of Mahomet," the Mohammedans are *Ismaelites* and claim to be descendants from *Ishmael*, the son of Abram by Hagar (Gen. xvi, 15), and that the *twelve princes* (or dukes) of Ishmael were :

- |              |            |           |              |
|--------------|------------|-----------|--------------|
| 1. Nebajoth, | 4. Mibsam, | 7. Massa, | 10. Jetur,   |
| 2. Kedar,    | 5. Mishma, | 8. Hader, | 11. Naphish, |
| 3. Abdeel,   | 6. Dumah,  | 9. Tema,  | 12. Kedemah. |

These tribes "dwelt from Havliah unto Shur, that is before Egypt, as thou goest toward Assyria." This country is said to have been Arabia.

**TWELVE ILLUSTRIOUS KNIGHTS.** Who are the "Twelve Illustrious Knights," which are said to have been Solomon's favorites in the building of his temple ?

J. P. SHIELDS.

Jeremy L. Cross, in his "Templar's Chart," pp. 20-21, says Solomon appointed Twelve Masters, one from each tribe, and gave them command. They gave an account to Solomon every day, of the work that was done in the temple, by their respective tribes, and received their pay. Cross gives their names as follows :

- |                           |                         |
|---------------------------|-------------------------|
| 1. Joabert was over Judah | 7. Kerim was over Dan,  |
| 2. Stockin Benjamin.      | 8. Berthemar Asher,     |
| 3. Terry Simeon,          | 9. Tito Naphtali,       |
| 4. Morphey Ephraim,       | 10. Terbal Reuben,      |
| 5. Alycuber Manasseh,     | 11. Benachard Issachar, |
| 6. Dorson Zebulon,        | 12. Taber Gad.          |

There is much traditional history associated with these names in their masonic connection with Solomon's Temple.

COMPLETING THE SQUARE. (Vol. VI, p. 236.) In James Ryan's "Elementary Treatise on Algebra" (6th edition, N. Y., 1851, p. 246), he says :

"It is proper to take notice here of the following method of resolving quadratic equations, the principle of which is given in the *Bija Ganita*, thus : If a quadratic equation be of the form  $4a^2x^2 \pm 4abx = \pm 4ac$ , it is evident that, by adding  $b^2$  to both sides, the left-hand member will be a complete square, since it is the square of  $2ax + b$ ; and, therefore, by extracting the square root of both sides, there will arise a simple equation, from which the value of  $x$ , may be determined."

Horatio N. Robinson, in his "Universal Key to the Science of Algebra" (Cincinnati, 1844, p. 74), has this query, after a solution of an example by James Ryan, in which solution Ryan uses the phrase "completing the square;" Robinson asks : "*How did he complete the square?*" We find no directions in his book that would enable us to do so." Now the question arises, is there any instructions how to "complete the square" in any edition of Ryan's "Algebra," prior to 1844, the year of the publication of Robinson's "Key?"

THE DUTCH GOVERNOR OF NEW YORK. (Vol. VI, p. 236.) That Dutch governor inquired for, who was "exactly five feet six inches in height, and six feet five inches in circumference," was the renowned Wouter (or Walter) Van Twiller. This surname Twiller is said to be a corruption of the original *Twijfler* (pronounced *Tweeffler*) which in English means "Doubter." This name was remarkably characteristic of his habits. He scarcely ever spoke except in monosyllables, and he never made up his mind on any doubtful point. He was a very wise Dutchman, never said a foolish thing, never was known to laugh; there was never a matter proposed to him but what he put on a mysterious look, shook his spherical head, smoked for five minutes, and then sagely observed, "I have my doubts about the matter." He did not care whether the sun revolved around him, or he around the sun. He governed New York 1633. A. L. C.

PARADISE FOUND. (Vol. VI, p. 236.) The book inquired for is probably "Paradise Found; the Cradle of the Human Race at the North Pole; a Study of the Prehistoric World." By Wm. F. Warren. Duodecimo, pp. 505. L. HUMBERTSON, Boston, Mass.



F. F. V's (FIRST FAMILIES OF VIRGINIA.). (Vol. VI, p. 236.) William H. Whitmore in an essay on "The Origin of the Founders of the Thirteen Colonies," 1864, says it is most erroneously supposed that the names of certain families are a proof of their gentle origin; that the idea is wholly unfounded; that the gentry of England consist of certain families, whose ancestors held a certain rank. Unless the line of descent can be regularly proved, identity of names signify nothing. This argument is based upon a certain arbitrary nomenclature. A Courtenay, a Howard, a De Vere, is not a gentleman in the sense the heralds use the term, unless he can trace his pedigree. Yet even here, the Virginians have no exclusive claim. The following list is given by Bishop Meade, as comprising the chief families of the Virginia gentry:

"Names of some of the old and leading families in Eastern Virginia, in colonial times and immediately succeeding the Revolution:

Acril, Alexander, Allen, Ambler, Archer, Armistead, Atkinson, Aylett.

Bacon, Baker, Baldwin, Ball, Ballard, Banister, Bankhead, Baskerville, Bassett, Baylor, Baynham, Berkeley, Beverly, Birchett, Blair, Bland, Blow, Bolling, Booker, Booth, Bouldin, Bowdoin, Bowyer, Bradley, Branch, Braxton, Brent, Broadnaxe, Brooke, Browne, Buckner, Burley, Burwell, Butler, Byrd.

Cabell, Calloway, Carr, Carrington, Carter, Cary, Catlett, Chamberlayne, Christian, Claiborne, Clarke, Clayton, Cocke, Coleman, Coles, Colston, Conway, Cooper, Corbin, Crawford, Custis.

Dabney, Dandridge, Daniel, Davenport, Davis, Digges, Dulany.

Edmunds, Edwards, Eggleston, Eldridge, Ellis, Embry, Eppes. Everard, Eyre.

Fairfax, Farley, Faulcon, Field, Fitzgerald, Fitzhugh, Fleming, Fry, Gay, Gaines, Garland, Garnet, Gholson, Gibbon, Gilmer, Goode, Goodwin, Grammat, Graves, Grayson, Green, Greenway, Griffin, Grymes.

Hackley, Hairston, Hansford, Hardaway, Harmer, Harrison, Harvie, Hawkins, Haynes, Henderson, Heath, Herbert, Heth, Hicks, Hodges, Holliday, Holmes, Hooe, Hopkins, Howard, Hubard.

Innes, Irby.

Jefferson, Jennings, Johnson, Jones, Joynes.

Kennon, King.

Lanier, Lee, Leftwich, Lewis, Lightfoot, Littlepage, Littleton, Lomax, Ludwell, Lyons.

Mallory, Marshall, Martin, Marye, Mason, Massie, Matthews, Mayo, McCarty, Meade, Mercer, Meredith, Meriwether, Michie, Minge, Moore, Mosby, Moseley, Morris, Morton, Munford.

Nash, Nelson, Newton, Nichols, Nivison, Noland, Norvell.

Page, Parke, Parker, Peachey, Pegram, Pendleton, Penn, Peter, Peyton, Phillips, Pierce, Pleasant, Pollard, Pope, Posey, Powell, Poythress, Prentice, Price, Prosser.

Randolph, Reade, Riddick, Roane, Robinson, Rose, Royall, Ruffin, Russell.

Savage, Saunders, Scarborough, Selden, Shepherd, Short, Skelton, Skepwith, Slaughter, Spencer, Spottswood, Stanard, Steptoe, Stevenson, Stith, Stokes, Strother, Swann, Syme.

Tabb, Talbot, Taliafero, Tayloe, Taylor, Tazewell, Terry, Thornton, Todd, Travis, Trent, Tucker, Tyler.

Upshaw, Upshur.

Vaughn, Venable.

Wane, Waller, Walker, Walton, Warde, Waryng, Washington, Watkins, Watson, Webb, West, Westwood, Whiting, Wilcox, Wilkins, Williams, Willis, Winston, Wise, Withers, Wood, Woodson, Wormley, Wyatt, Wythe.

Yates, Yelverton.

Most of the names in this catalogue are also found in Savage's 'Dictionary of the Settlers of New England.' Two-thirds of them are to be found in both places. The proof is as ample in one case as the other. If the Virginians were gentlemen on account of their names, so were the Yankees."—*Meade*, Vol. II, p. 428.

THE KNIGHT'S TOUR—QUOTATION FROM SHAKESPEARE. (Vol. VI, p. 222.) After getting a start, and making sure I was right, I have succeeded in following the knight over the chess-board and find that his 64 footsteps make the quotation found in *King John* Act IV, Sc. II, lines 11-16 :

" To gild refined gold, to paint the lily,  
To throw a perfume on the violet,  
To smooth the ice, or add another hue  
Unto the rainbow, or with taper-light  
To seek the beauteous eye of heaven to garnish,  
Is wasteful, and ridiculous excess."

G. S. C.

" MILLIONS "—WHERE FIRST FOUND? (Vol. VI, p. 236.) The first and only place found in the Bible is Genesis XXIV, 60 :

The King James version reads " Be thou *the mother* of thousands of millions."

The Septuaginta reads "*chiliádas mysiádon*."

The Douay version reads "thousands of thousands."

The Julia A. Smith version reads "thousands of ten thousands."

**THE PHŒNIX.** (Vol. VI, p. 221.) The story of the long life of the bird called the Phœnix is found in the apocryphal epistle of Clement to the Corinthians, and there given as a proof of the resurrection. We give the translation as found in the "Anti-Nicene Christian Library—The Apostolic Fathers," Vol. I, p. 25, First Epistle to the Corinthians xxv :

"Let us consider that wonderful sign [of the resurrection] which takes place in eastern lands, that is, in Arabia and the countries round about. There is a certain bird which is called a phœnix. This is the only one of its kind, and lives five hundred years. And when the time of its dissolution draws near that it must die, it builds itself a nest of frankincense, and myrrh, and other spices, into which, when the time is fulfilled, it enters and dies. But as the flesh decays a certain kind of worm is produced, which, being nourished by the juices of the dead bird, brings forth feathers. Then, when it has acquired strength, it takes up that nest in which are the bones of its parent, and bearing these it passes from the land of Arabia into Egypt, to the city called Heliopolis. And, in open day, flying in the sight of all men, it places them on the altar of the sun, and having done so, hastens back to its former abode. The priests then inspect the registers of the dates, and find that it has returned exactly as the five hundredth year was completed."

The story of the Phœnix is also given by Herodotus, in his second book entitled *Euterpe*, Sec. LXIII, in little different language as translated, and for comparison we will quote it here :

"They [the Egyptians] have also another sacred bird, which, except in a picture, I have never seen ; it is called the phœnix. It is very uncommon even among themselves ; for according to the Heliopolitans, it comes there once in the course of five hundred years, and then only at the decease of the parent bird. If it bear any resemblance to its picture, the wings are partly of a gold and partly of a ruby color, and its form and size perfectly like the eagle. They relate one thing of it that surpasses all credibility ; they say that it comes from Arabia to the Temple of the Sun, bearing the dead body of its parent inclosed in myrrh, which it buries. It makes a ball of myrrh shaped like an egg, as large as it is able to carry, which it proves by experiment. This done, it excavates the mass, into which it introduces the body of the dead bird ; it again closes the aperture with myrrh, and the whole becomes the same weight as when composed entirely of myrrh ; it then proceeds to Egypt to the Temple of the Sun."

Ovid relates substantially the same story in *Metamorphoses* xv, 392, and represents Pythagoras as adducing the story of the phœnix by way of exemplifying the perpetual reproduction of the world ; and

in point of application there is reason to believe that the mythos originated from this very doctrine. The *Phœnicians* gave the name phoenix to the palm-tree, because when burnt down to the ground it springs up again fairer and stronger than ever. Phoenix is said to have been the grandson of Saturn, and Sir W. Drummond, author of *Œdipus Judaicus*, thinks the word is derived from *Enoch*, or rather from *Phenach* with the old Egyptian definite article *Pi* prefixed. Montfauçon says the phoenix is represented on a medal of Constantine the Younger, on top of a rock, all radiant, with the inscription, *Felix temporum reparatio*, "the happy restoration of the times," which is agreeable to the opinion of the ancients that the phoenix renewed itself.

In many modern works the phoenix is quoted to live "six hundred years," but the ancient record gives it as "five hundred years."

"THE KINGDOM OF HEAVEN—WHAT IS IT? WHERE IS IT?" (Vol. VI, p. 236.) Undoubtedly this contributor refers to Rev. Jesse H. Jones's book with the above heading, which was published in 1871, duodecimo, 362 pages. "Dedicated to the children of the Pilgrims and Puritans, that people whom God has blessed with the richest inheritance, and laden with the heaviest responsibilities ever allotted to a race of men, is this slight contribution to the celebration of the Jubilee Year." The 215th page of the book is bordered, and the following displayed as a full page:

THE UNITED STATES OF AMERICA IS THE KINGDOM OF HEAVEN  
WHICH JESUS CHRIST CAME TO ESTABLISH UPON THE EARTH.

The summary of the future movement is that political equality will be granted to women; the abolition of the liquor traffic and the obliteration of the drinking custom; the labor question is to be settled by the principles and practices of the Pentacostal church; the Jews will accept Jesus as their Messiah; the United States will obtain the independence of Palestine; the Jews will gather and return there in myriads, never again to be dispersed; the Gentiles will be servants to the Jews; Jesus Christ will descend from heaven and establish his throne on Mount Moriah on the spot where the ark of the covenant sat; He will reign as universal King, and thus will "the tabernacle of God be with men"; and on this earth He is to be exalted to the throne of Universal Dominion, and to be entitled

"KING OF KINGS AND LORD OF LORDS."

*Folk-Lore.*

THE HOUSE THAT JACK BUILT. (Vol. IV, p. 243.) The Hebrew version of this nursery folk-lore has already been given. There is another quaint parable in the same view, called the "Cornish Christmas Carol," as follows :

1. First voice, Come and I will sing you !  
 Secoud voice, What will you sing me ?  
 First voice, I will sing One—O ;  
 Second voice, What is your One—O ?  
 First voice, One of them is God alone,  
 And He ever shall remain so.
2. (First two lines as above.)  
 First voice, I will sing you Two—O !  
 Second voice, What is your Two—O ?  
 First voice, Two of them are lily-white babes.  
 All clothed in green—O.  
 Chorus, One of them is God alone,  
 And He ever shall remain so.
3. (Four lines as before, after waiting quesilon and answer, and changing to Three—O)  
 First voice, Three of them are strangers,  
 Chorus, Two of them are lily-white babes,  
 All clothed in green—O.  
 One of them is God alone,  
 And He ever shall remain so.
4. (As before, changing to Four—O.)  
 First voice, Four are the gospel preachers,  
 Chorus, Three of them are strangers,  
 Two of them are lily-white babes.
5. (As before, changing to Five—O.)  
 First voice, Five is the ferryman in the boat,  
 Chorus, Four are the gospel preachers,  
 (Three as before, to the end.)
6. (As before, changing to Six—O.)  
 First voice, Six are the cheerful waiters,  
 Chorus, (Five as before, and continue.)
7. (As before, changing to Seven—O.)  
 First voice, Seven are seven stars in the sky,  
 Chorus, (Six as before, and continue.)
8. (As before, changing to Eight—O.)  
 First voice, Eight is the great archangel,  
 Chorus, (Seven as above, and continue.)
9. (As before, changing to Nine—O.)  
 First voice, Nine is the moonshine, bright and clear,  
 Cuorns, (Eight as before. and continue.)
10. (As before, changing to Ten—O.)  
 First voice, Ten are the Ten Commandments,  
 Chorus, (Nine as before, and continue.)
11. (As before, changing to Eleven—O.)  
 First voice, Eleven of them have gone to heaven,  
 Chorus, (Ten as before, and continue.)
12. (As before, changing to Twelve—O.)  
 First voice, Twelve are the Twelve Apostles,  
 Chorus, (Eleven as before, and continue.)

This quaint old carol was set from the singing of three children in Essex, N. Y., who, during a residence on the southern shore of Lake Superior, caught it by ear from the Comishwen engaged in the copper mines of that region. There is something strikingly beautiful in the constant recognition of the Deity of Christ, as well as in the skill with which the incarnation and birth of our Lord are made the central point and history, as well as of the universe. But the allusions are something not self-evident.

The "two lily-white babes" are our Lord and St. John the Baptist; and they are "clothed in green" as a type of their growth — the one to be the greatest of those who had preceded Christ, and the other to be the "stone cut out without hands," which should fill the whole world.

The "three strangers" are the magi, or the three kings of the Orient."

The "gospel preachers" are the four evangelists.

The number "five" is the number of the books of Moses, and the "ferryman in the boat" represents the Law in the ship of the Mosaic church, as the "schoolmaster" bringing us to Christ.

The "six cheerful waiters" are Zachariah and Elizabeth, Joseph and Mary, Simeon and Anna, who waited for the consolation of Israel. (Luke II, 25.)

The "seven stars" are meant to include our whole solar system—perhaps they stand for the whole starry firmament.

The "eight," the peculiar dominical number, is given to the "great archangel" who announced the birth of Christ.

There is no reason that I know for giving "nine" to the "moonshine," unless there was no other number of the series left vacant.

The "Ten Commandments" are not a duplication of the mention of the Law, but refer to Christ alone who perfectly kept them all.

The "eleven" recognizes the presence of the apostles in "heaven," where they still pray for the Church, while Judas "went to his own place."

The "Twelve Apostles" nevertheless crown the end with the full number, as completed in the foundations of the New Jerusalem.

REV. J. H. HOPKINS.

**FLEMISH FOLK-LORE.** Attention is called to the study of animal lifetime which has called forth this formula from Flemish folk-lore,—a “town” or enclosure being supposed to last three years :

A town lives three years,  
A dog lives three towns,  
A horse lives three dogs,  
A man lives three horses,  
An ass lives three men,  
A wild goose lives three asses,  
A crow lives three wild geese,  
A stag lives three crows,  
A raven lives three stags,  
And the phoenix lives three ravens.

**VERMONT FOLK-LORE.** In Windsor county, Vt., when children are at play, and are about to jump off a fence, rock, or an elevated place, they often repeat the following :

One to make ready,  
Two to prepare,  
Three to go slender,  
Four to go there.

In Rutland county, the children repeat the following :

One for a penny,  
Two for a show,  
Three to make ready,  
And four for to go.

J. M. CURRIER.

In Hillsborough county, N. H., forty years ago, children arising, after eating hasty pudding and milk, repeated the following :

First the best, second the same,  
Third the bird, and fourth the game,  
Fifth the lubber, and sixth the same.

**WEATHER FOLK-LORE.** More than thirty years ago, the New England almanacs contained the following :

An evening red and a morning gray,  
Will set the traveler on his way;  
But an evening gray and a morning red,  
Will pour down rain on a pilgrim's head.

A rainbow in the morning,  
Is the shepherd's warning;  
A rainbow at night,  
Is the shepherd's delight.

If Candlemas day be fair and bright,  
Winter will have another flight;  
But if Candlemas day be cloudy, and rain,  
Winter has gone not to come again.

When Christmas is white,  
The graveyard is lean;  
But fat is the graveyard,  
When Christmas is green.

If the cock goes crowing to bed,  
He'll certainly rise with a watery head.

If the moon shows like a silver shield,  
Be not afraid to reap your field.

When you see a gossamer flying,  
Be sure the air is drying.

When the peacock loudly bawls,  
Soon we'll have both rain and squalls.

When black snails cross your path,  
Black clouds much moisture hath.

February 2 is Candlemas day,  
Half the corn and half the hay.

Wind from the east is bad for man and beast;  
Wind from the south is too hot for them both;  
Wind from the north is of very little worth;  
Wind from the west is the softest and best.

when the ass begins to bray.  
We surely shall have rain today.  
When the donkey blows his horn,  
'Tis time to house your hay and corn.

Rain before seven, fine before eleven.

## PROBLEMS.

—o—o—o—

Colebrooke's "Hindoo Algebra" gives some amusing examples that are appropriate here :

1. "Pretry girl, with tremulous eyes, if thou knowest the correct method of inversion, tell me what is the number, which multiplied by 3, and added to  $\frac{3}{4}$  of the product, and divided by 7, and reduced by subtraction of  $\frac{1}{8}$  part of the quotient, and then multiplied into itself, and having 52 subtracted from the product, and the square root of the remainder extracted, and 8 added, and the sum divided by ten, yields 2."

—Colebrooke, p. 21.

2. "Beautiful and dear Lilávati (delightful), whose eyes are like a fawn's, tell me what are the numbers resulting from 135 taken into 12. If thou be skilled in multiplication, by whole or by parts, whether by subdivision of form, or separation of digits, tell me, auspicious woman, what is the quotient of the product divided by the same multiplier?"

—Colebrooke, p. 6.

3. "Out of a swarm of bees,  $\frac{1}{8}$  part settled on a blossom of Cadamba (*Nauclea Orientalis*), and  $\frac{1}{8}$  part on a flower of Sulind'hri (a plant resembling the Cachóra); 3 times the difference of those numbers flew to the bloom of a Cutaja; 1 bee, which remained, hovered and flew about in the air, allured at the same moment by the pleasing fragrance of a jasmin and pandanus. Tell me, charming woman, the number of bees."

—Colebrooke.

4. In what time will an annual pension of \$500 amount to \$3,450 at 6 per cent. simple interest? I. B.

5. A laborer engaged to work 10 days, on condition that he should have 12 dimes for a day's labor, and pay 2 dimes for every idle day for board; he received as many dollars as he worked days. How many days was he idle? I. B.

6. Archimedes is said to have calculated the number of grains of sand contained in the *Cosmos* — the sphere of which the earth is the center, and its radius the distance of the sun. How did he calculate the number, and what answer did he obtain? LEON.

7. A, B, and C, with their wives (P, S, and V), went to market to buy pigs. Each man and each woman bought as many as they gave shillings for each pig. A bought 23 pigs more than S; B bought 11 more than P; also each man paid out 63 shillings more than his wife. Which two persons were man and wife? LEON.



## QUESTIONS.

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1. (a) At what period and where was the letter Z pronounced *zed*, or *izzard*? Methinks the spelling of the word *gizzard* must needs have been cumbersome.

(b) I think I have seen it stated that the publishers of Webster's "New Illustrated Dictionary" offered a prize to any one reporting any typographical errors. Were any found, and if so, what were they?

(c) The word *Amen*, a dissyllable, has two accents, *a-men*, and *á-men*. What other examples does the English language contain?

(d) Several years ago, a New York evening party called for a morning prayer, an appropriate accompaniment to the famous evening prayer of childhood—"Now I lay me down to sleep." Many contributions were sent in. Was any one adopted, and if so, what?

(e) What is the origin of the "XXX" sign relating to manufacturing of ale?

(f) What is the real origin of the so-called "powwowing" as set forth in the so-called "Sixth and Seventh Books of Moses," and the "Long Lost Friend" of George Jacob Hohman?

(g) How does a spider spin a thread across a highway from fence to fence.

(h) What is the origin of the phrase, "Robbing Peter to pay Paul?"

(i) A person with congenital cataract can distinguish cubes from balls. After being operated on successfully can he distinguish them as such by the sense of sight alone?

(j) How do surnames beginning with the letter "I," in point of number, compare with those beginning with other letters?

(k) What per cent. of water is contained in animals, and also in vegetables?

(m) What is the correct pronunciation of *Schizomycetes*, *Plomaines*, *Atzerodt*? ISRAEL.

(l) What are the most extreme temperatures observed, and where? also, the greatest degrees of heat and cold artificially produced?

2. (a) Who are the authors of, and where found, the following quotations: "Familiarity breeds contempt"; "Still waters run deep?"

(b) What is the legend of *Childe the Hunter*? J. G. D.

3. (a) If all beings had no ears would there be and *sound*?

(b) Could one who was born blind and has been taught to read with the fingers, read by the sense of sight if at once endowed with sight? A. S. H.

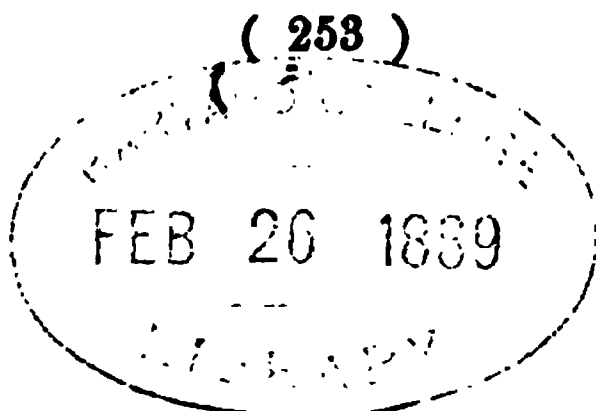
4. What is the technical name of such words as *Llewellyn*, *Lloyd*, *Llano*, etc., and from what language do these come? X.











MISCELLANEOUS

# NOTES AND QUERIES,

WITH ANSWERS.

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*"There's a divinity that shapes our ends."*—SHAKESPEARE.

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## THE PHŒNIX.

A PROSE POEM ATTRIBUTED TO LANCTANTIUS

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There is a happy spot, retired in the first East, where the gate of the eternal pole lies open. It is not, however, situated near to his rising in summer or in winter, but where the sun pours the day from his eternal chariot. There a plain spreads its open tracts; nor does any mound arise, nor hollow valley open itself. But through twice six ells that place rises above the mountains, whose tops are thought to be lofty among us. Here is the grove of the sun; a wood stands planted with many trees, blooming with the honor of perpetual foliage. When the pole blazed with the fires of Phaeton, that place was uninjured by the flames; and when the deluge had immersed the world in waves, it rose above the waters of Ducalion. No enfeebling diseases, no sickly old age nor cruel death, nor harsh fear, approaches hither, nor dreadful crime, nor mad desire of riches, nor Mara, nor fury, burning with the love of slaughter. Bitter grief is absent, and want clothed in rags, and sleepless cares, and violent hunger. No tempest rages there, nor dreadful violence of the wind; nor does the hoar-frost cover the earth with cold dew. No cloud extends its fleecy covering above the plains, nor does the turbid moisture fall from on high; but there is a fountain in the middle, which they call by the name of "Living"; it is clear, gentle, and abounding with sweet waters, which, bursting forth once during the space of each month, twelve times irrigates all the grove with waters. Here a specie of

tree, rising with lofty stem, bears mellow fruits not about to fall on the ground. This grove, these woods, a single bird, the phoenix, inhabits,—single, but it lives reproduced by its own death. It obeys and submits to Phœbus, a remarkable attendant. Its parent, nature has given it to possess this office. When at its first rising the saffron morn grows red, when it puts to flight the stars with its rosy light, thrice and four times it plunges its body into the sacred waves, thrice and four times it sips water from the living stream. It is raised aloft, and takes its seat on the highest top of the lofty tree, which alone looks down upon the whole grove; and turning itself to the fresh risings of the nascent Phœbus, it awaits his rays and rising beam. And when the sun has thrown back the threshold of the shining gate, and the bright gleam of the first light has shone forth, it begins to pour strains of sacred song, and to hail the new light with wondrous voice, which neither the notes of the nightingale nor the flute of the Muses can equal with Cyrrhæan strains. But neither is it thought that the dying swan can imitate it, nor the tuneful strings of the lyre of Mercury. After that Phœbus has brought back his horses to the open heaven, and continually advancing, has displayed his whole orb, it applauds with thrice-repeated flapping of its wings, and having thrice adored the fire-bearing head, is silent. And it also distinguishes the swift hours by sounds not liable to error by day and night; an overseer of the groves, a venerable priestess of the wood, and alone admitted to thy secrets, O Phœbus. And when it has now accomplished the thousand years of its life, and length of days has rendered it burdensome, in order that it may renew the age which has glided by, the fates pressing it, it flees from the beloved couch of the accustomed grove. And when it has left the sacred places, through a desire of being born again, then it seeks this world, where death reigns. Full of years, it directs its swift flight into Syria, to which Venus herself has given the name of Phœnice; and through trackless deserts it seeks the retired groves in the place where a remote wood lies concealed in the glens. There it chooses a lofty palm, with top reaching to the heavens, which has the pleasing name of Phoenix, from the bird, and where no hurtful living creature can break through, or slimy serpent, or any bird of prey. Then Æolus shuts in the winds in hanging caverns, lest they should injure the bright air with their blasts, or lest a cloud collected by the south wind through the empty sky should remove the rays of the sun, and be a hindrance to the bird. Afterwards it builds for itself either a nest or a tomb, for it perishes that it may live; yet it reproduces itself. Hence it collects juices and odors, which the Assyrian gathers from the rich wood, which the wealthy Arabian gathers; which also either the Pygmæan nations, or India crops, or the Sabæan land produces from its soft bosom. Hence it heaps together cinnamon and the odor of the far-scented amomum,

and balsams with mixed leaves. Neither the twig of the mild cassia nor of the fragrant acanthus is absent, nor the tears and rich drops of frankincense. To these it adds tender ears of flourishing spikenard, and joins the two pleasing pastures of myrrh. Immediately it places its body about to be changed on the strewed nest, and its quiet limbs on such a couch. Then with its mouth it scatters juices around and upon its limbs, about to die with its own funeral rites. Then amid various odours it yields up its life, nor fears the faith of so great a deposit. In the meantime, its body, destroyed by death, which proves the source of life, is hot, and the heat itself produces a flame ; and it conceives fire afar off from the light of heaven ; it blazes, and is dissolved into ashes. And these ashes collected in death, it fuses, as it were, into a mass, and has an effect resembling seed. From this an animal is said to arise without limbs, but the worm is said to be of a milky color. And it suddenly increases vastly with an imperfectly formed body, and collects itself into the appearance of a well-rounded egg. After this it is formed again, such as its figure was before, and the phoenix, having burst its shell, shoots forth, even as caterpillars in the fields, when they are fastened by a thread to a stone, are wont to be changed into a butterfly. No food is appointed for it in our world, nor does any one make it his business to feed it while unfledged. It sips the delicate ambrosial dews of heavenly nectar which have fallen from the star-bearing pole. It gathers these ; with these the bird is nourished in the midst of odors, until it bears a quite perfect natural form. But when it begins to flourish with early youth, it flies forth now about to return to her native abode. Previously, however, it encloses in an ointment of balsam, and in myrrh and dissolved frankincense, all the remains of its own body, and the bones or ashes, and relics of itself, and with pious mouth brings it into a round form, and carrying this with its feet, it goes to the rising of the sun, and tarrying at the altar, it draws it forth in the sacred temple. It shows and presents itself an object of admiration to the beholder ; such great beauty is there, such great honor abounds. In the first place, its color is like the brilliancy of that which the seeds of pomegranate when ripe takes under the smooth rind ; such color as is contained in the leaves which the poppy produces in the fields, when Flora spreads her garment beneath the blushing sky. Its shoulders and beautiful breasts shine with this covering ; and its head, with its neck also, and the upper parts of its back, shine. And its tail is extended, varied with yellow metal, in the spots of which mingled purple blushes. Between its wings there is a bright mark above, as Iris on high is wont to paint a cloud from above. It gleams resplendent with a mingling of the green emerald, and a shining beak of pure horn opens itself. Its eyes are large ; you might believe that they were two jacinths ; from the middle of which a bright flame



shines. An irradiated crown is fitted to the whole of its head, resembling on high the glory of the head of Phœbus. Scales cover its thighs spangled with yellow metal, but a rosy color paints its claws with honor. Its form is seen to blend the figure of the peacock with that of the painted bird of Phasis. The winged creature which is produced in the land of the Arabians, whether it be beast or bird, can scarcely equal its magnitude. It is not, however, slow, as birds which through the greatness of their body have sluggish motions, and a very heavy weight. But it is light and swift, full of royal beauty. Such it always shows itself in the sight of men. Egypt comes hither to such a wondrous sight, and the exulting crowd salutes the rare bird. Immediately they carve its image on the consecrated marble, and mark both the occurrence and the day with a new title. Birds of every kind assemble together; none is mindful of prey, none of fear. Attended by a chorus of birds, it flies through the heavens, and a crowd accompanies it, exulting in the pious duty. But when it has arrived at the regions of pure ether, it presently returns; afterwards it is concealed in its own regions. But Oh, bird of happy lot and fate, to whom the god himself granted to be born from itself! Whether it be female, or male, or neither, or both, happy it, who enters into no compacts with Venus. Death is Venus to it; its only pleasure is in death; that it may be born, it desires previously to die. It is an offspring to itself, its own father and heir, its own nurse, and always a foster-child to itself. It is itself indeed, but not the same, since it is itself, and not itself, having gained eternal life by the blessing of death.



A CURIOUS BILL. The following curious bill is reported to be a true copy from the records of a church in England. Can any reader confirm the authenticity of this statement, or is it merely a fictitious facetia?

DJAFAR.

WINCHESTER, October, 1182.

For work done by Peter M. Sollers:

	sh.	d.
In soldering and repairing St. Joseph, . . .	0	3
Cleaning and ornamenting the Holy Ghost, . . .	0	6
Repairing the Virgin Mary behind and before, } and making a new child, }	4	8
Screwing a nose on the Devil, and placing a } new joint in his tail, }	6	6

Paid December, 1182.

P. M. SOLLERS, Church Mason.

LONG NAME. There is a town in Wales that glories in the name of "Llanfairpwllgwyngyllgogerychwyrndrobwlllantysiliogogogoch."

*Waste-Basket of Words.*

[From Journal of American Folk-Lore, Vol. I, No. II, 1888.]

*Æstuation*.—"The good father could not discourse of this subject without some passionate *Æstuation*." Sewell's Letter-Book, vol. i, p. 193.—H. W. Haynes, Boston, Mass.

*Barn*.—"To dry the corne, which they (the Indians) do carefully upon heaps and mats many days before they *barn* it up." Roger Williams' "Key into the Language of America" ("R. I. Hist. Soc. Rep." p. 92). The word is used in a similar sense by Shakespeare. "Rape of Lucrece," l. 859: "And useless *barns* the harvest of his wits."—H. W. Haynes.

*Ill*.—Used by negroes in Washington very much as *ugly* is often employed at the North. The negro mentioned says a horse that is cross, or threatens harm, is *ill*, though in excellent health.—W. H. Babcock, Washington, D. C.

*Levit*.—"Monday, January 1, 1704-5, Col. Hobbey's negro comes about 8 or 9 *mane*, and sends in by David to have leave to give me a *Levit* and wish me a happy new year. I admitted it: gave him 3 reats. Sounded very well." Sewell's Diary, vol. ii. p. 121. The editors append this note: "Levit—a blast of a trumpet." The word is found in Hudibras, p. ii. c. ii. l. 611.—H. W. Haynes.

*Mammock*.—This word, referred to in the first number of the FOLK-LORE JOURNAL, is still in use in the District of Columbia. A colored man employed by me frequently complains that the cows "*mammock* the hay" so badly.—W. H. Babcock.

*Retaliation*.—This word has fared like *resent*, quoted in the last number. Formerly it was used in a good sense, as well as in a bad one. In the "Boston Town Records," March 11, 1700, we find a vote, "That the Selectmen should cause a piece of plate to be made of the value of 20 pounds, and present the same to Mr. James Taylor as a small *retaliation* of his service and kindness to the Town." "Seventh Report of Record Commissioners," p. 240.—H. W. Haynes.

*Inned*.—In the "Lawes and Ordinances of Warre," passed by the General Court of the Colony of Massachusetts, in 1675, is an order for "securing the graine *inned* in the barnes of the several inhabitants." "Colonial Laws" (Whitmore's reprint), p. 240. This word is used by Shakespeare in "All's Well that ends Well," A. i. Sc. 3, "to *inn* the crop."—H. W. Haynes.

*Quarrels*.—"Something was thrown forcibly against the upper part of the north window, and five or six *quarrels* broken out." Sewell's Diary, Nov. 27, 1719; vol. iii, p. 235.—H. W. Haynes.

*Shanty*.—The dictionaries give the derivation of this word as from the Irish *sean*, old, and *tig*, a house; but Dr. Bouvinot says it is a

corruption of *chantier*, used by the French Canadians. See "Scottish Review," April, 1887, vol. ix. p. 257.—H. W. Haynes.

*Sign.*—Constantly used in Washington as a term for marking off the land for corn or potatoes.—W. H. Babcock.



**BARDESANES' ASTRONOMICAL CALCULATIONS.** Bardesanes, the gnostic, a Syrian who lived in the latter part of the second century at Edessa, and who was a favorite of Agbar Bar Maanu, is memorable for the peculiarity of his doctrines. He calculated at that early date the completion of 6,000 years, in solar days, the revolution of the then known heavenly bodies, and put it on record so that future ages could test his calculations. The following table will show a comparison of his record with modern calculations. This table is calculated on the sidereal revolutions in solar days, as given in H. M. Bouvier's "Familiar Astronomy," 1857, p. 469. His approximations are quite remarkable for the time in which they were made.

Bodies.	Bardesanes' Round Multipliers.	6,000 Years, Solar Days. Bardesanes' Approximations.	Round Multipliers.	6 000 Years, Solar Days. Nearer Approximations.
Sun,	60,000	1,507,800.	87,000	2,186,310.
Mercury,	24,000	2,111,262.192	25,000	2,199,231.45
Venus,	7,200	1,617,896.6568	9,700	2,179,597.6329
Earth,	6,000	2,191,538.1672	6,000	2,191,538.1672
Mars,	4,000	2,747,918.832	3,299	2,198,334.8665
Jupiter,	500	2,166,292.4106	500	2,166,242.4106
Saturn,	200	2,151,843.96348	200	2,151,843.9634
Uranus,			700	2,148,077.458
Neptune,			400	2,405,068.4
Moon,			8,000	2,185,732.9144

**EPITAPH ON DIOPHANTUS.** The following epitaph on Diophantus is found in "Mathematical Questions and Solutions from the *Educational Times*," Vol. XLIX, 1888. Will some one give an English translation for those who cannot read the Latin :

Hic Diophantus habet tumulum, qui tempora vitæ  
Illius mira denotat arte tibi.  
Egit sextantem juvenis; lanugine malaa  
vestire hinc coepit parte duodecima.

Septante uxori post hæc sociatur, et anno  
Formosus quinto nascitur inde puer.

Semissem ætatis postquam attigit ille paternæ  
Infelix subita morte peremptus obit.  
Quator æstates genitor lugere superstes  
Cogitur: hinc annos illius assequere.

H.

**ENGLISH KINGS AND QUEENS.** William the Conqueror died from enormous fat, drink, and the violence of his passions, Sept. 9, 1087.

William II, Rufus, killed by an arrow, while hunting, Aug. 2, 1100.

Henry I, Beauclerc, died of a surfeit, Dec. 1, 1185.

Henry II, Plantagenet, died of a broken heart, July 6, 1189.

Richard I, Cœur de Lion, died from a wound made by an arrow, April 6, 1199.

John, died no body knows how, Oct. 19, 1216.

Henry III is said to have died a natural death, Nov. 16, 1272.

Edward I. Longshanks, died from "natural sickness," July 7, 1307.

Edward II, murdered at Berkeley Castle, Sept 21, 1307.

Edward III died from dotage, June 27, 1377.

Richard II, the Black Prince, murdered at Pomfret Castle, Feb. 10, 1310.

Henry IV died from fits of "uneasiness," March 20, 1314.

Henry V died from "painful affliction, prematurely," Aug. 31, 1422.

Henry VI murdered by Richard, duke of Gloucester, in the Tower, June 20, 1471.

Edward IV died a natural death, April 9, 1483.

Edward V murdered in the Tower, by duke of Gloucester.

Richard III slain at Bosworth, Aug. 22, 1485.

Henry VII wasted away, died April 21, 1509.

Henry VIII died from carbuncles, Jan. 28, 1547.

Edward VI (by Jane Seymour) died of decline of years, July 6, 1553.

Queen Mary is said to have died of a broken heart, Nov. 17, 1558.

Queen Bess (by Anne Boleyn) died of melancholy, March 24, 1603.

James I died from drinking, March, 1619.

Charles I beheaded at Whitehall, Jan. 30, 1649.

Charles II died suddenly of apoplexy, Feb. 6, 1685.

William III, Prince of Orange, died from effects of the stumblin of his horse, March, 8, 1702.

George I died from apoplexy, June 11, 1727.

George II died from a rupture of the heart, Oct. 25, 1760.

George III died a natural death, Jan. 29, 1820.

George IV died of gluttony, June 26, 1830.

William IV, brother of George IV, died June 20, 1837.

Queen Victoria, born May 24, 1819 ; succeeded to the throne June 20, 1837 ; crowned June 28, 1838 ; married Feb. 10, 1840 ; reigning.

*Palindromes — For the Young Folks.*



1. Yreka Bakery.
2. Madam, I'm Adam.
3. Name no one man.
4. Red root put up to order.
5. Draw pupil's lip upward.
6. Able was I ere I saw Elba.
7. Snug & raw was I ere I saw war & guns.
8. Trash, even interpret Nineveh's art.
9. Lewd did I live & evil I did dwel.
10. Red rum did emit revel ere Lever time did murder.
11. Stiff, O dairyman, in a myriad of fits.
12. No, it is opposed, art sees trade's opposition.
13. Now stop, Major General, are negro jam-pots won.
14. But ragusa stare, babe, rats a sugar tub.
15. No, its a bar of gold, a bad log for a bastian.
16. Stop, Syrian, I start at rats in airy spots.
17. Desserts desire not, so long no lost one rise distressed.
18. No sot nor Ottawa law at Toronto, son.
19. Paget saw an Irish tooth, Sir, in a waste gap.
20. Name tarts, no medieval slave, I demonstrate man.
21. Eureka, till I pull up ill, I take rue.
22. I am God, deified, dogma I.
23. Ned, I am now a won maiden.
24. O had I Idaho.
25. Evil Elba I may amiable live.
26. Madam, Adam did live ere evil, did Adam, Madam ?
27. Madam saw Aaron tar a rat ; Nora A. was madam.



1. Ablata at alba.
2. Si nummi immunis.
3. Sator arepo tenet opera rotas.
4. Odo tenet mulum, madidam, mulum tenet Odo.
5. Anna tenet mappan, madidam, mappan tenet Anna.
6. Signa te signa ; temere me tangis et angis.
7. Roma tibi subito motibus ibit amor.
8. Acide me malo, sed non desola me, medica.
9. Arca serenum me gere regem, munere sacra.
10. Solem, arcas, animos, omina, sacra, melos.

### *Questions and Answers.*

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**THE CYCLADES.** Where are the Cyclades, and what are the modern names? ANDREW.

The name *Cyclades* was applied by the ancient Greeks to that cluster of islands encircling (*kuklos*) Delos on the south-east of Greece. Strabo says at first the Cyclades were only 12 in number, but were afterwards increased to 15. Anthon gives 16. Their ancient and modern names are :

Delos,	Delo, Deli, Sdilli.	Oleāros,	Antiparo.
Ceos,	Zea.	Pāros,	Paro.
Cythnos,	Thermia.	Naxo,	Naxia.
Serīphos,	Serpho.	Syros,	Syra.
Mēlos,	Milo.	Mycōnos,	Myconi.
Siphnos,	Siphanto.	Tenos,	Tino, Hydrussa.
Cimōlus,	Cimoli, Argentiera.	Andros,	Andro.
Prepesinthus,	Spotiko, Despotiko.	Gyārus,	Ghioura.

The Sporades (*scattered*) are the islands scattered around the Cyclades, and those also that lay toward Crete and the coast of Asia Minor. They are the following :

Thera,	Santorin.	Amorgos,	Amorgo.
Anāphe,	Anpnio.	Astypalēa,	Staeplia.
Ios,	Nio.	Tēlos,	Episcopia.
Sicinos,	Sikino.	Nisyros,	Nisari.
Pholegandros,	Policandro.	Carpāthus,	Scarpanto.
Donyssa,	Raclia.		

**ISAIAH THOMAS.** Who can give me a brief sketch of Isaiah Thomas, the antiquarian? ELPIS.

Isaiah Thomas was the son of Moses Thomas. He was born in 1749. His father died when he was young. At the age of six years he was put out as an apprentice to Z. Fowle, with whom he remained eleven years. In 1770, he commenced in Boston the publication of the Massachusetts *Spy*, in which paper he published many spirited articles against the oppressive laws of the British Parliament towards the New England Colonies. In 1771, Gov. Hutchinson and Council, on account of an article that appeared in the *Spy*, endeavored to bring Mr. Thomas before them, but so much resistance was made that the measure was finally dropped. In 1775, he removed his paper to Worcester, and three years after opened a bookstore in Boston. At

one time he had under his control sixteen presses in use, and eight bookstores. He issued a folio edition of the Bible in 1791. In the latter part of his life Mr. Thomas founded the American Antiquarian Society, for which he erected a brick block at Worcester, and of this Society he was president and a most liberal patron. The honorary degree of Doctor of Laws was conferred upon him by the Alleghany College, Pennsylvania. In 1810 he published in two volumes, octavo, a valuable "History of Printing in America," which show an immense amount of research. He died at Worcester, April 4, 1831, at the age of 82 years.

"MILLIONS." (Vol. VI, p. 236 ; 246.) Your correspondent asks where the word *millions* is first found (p. 236,) and later on he is referred to Genesis xxiv, 60. The Latin Vulgate version reads "*mille millia*" (a thousand thousands), although the Douay translation reads "thousands of thousands." In Robert Recorde's arithmetic no mention of "millions" is made. The edition of 1557 is entitled :

"The whetstone of witte, whiche is the seconde parte of Arithmetike : containyng the xtraction of Rootes : The Cossike practise, with the rule of Equation : and the workes of Surde Numbers." Quarto.

It is scarcely remembered that the old name of Algebra, the *cossic* art (from *cosa*, a thing), gave this first English work on algebra the punning title, "the *whetstone* of witte," *Cos ingenii*. The following example from Recorde illustrates decimal enumeration when above 999,999 :

"A general rule.—Scholar. If I make this number 91359684, at all adventures there are eight places. In the first place is 4, and betokeneth but four ; in the second place is 8, and betokeneth ten times 8, that is 80 ; in the third place is 6, and betokeneth six hundred ; in the fourth place 9 is nine thousand ; and 5 in the fifth place is XM times five, that is fifty M. So 3 in the sixth place is CM times 3, that is CCCM. Then 1 in the seventh place is one MM ; and 9 in the eighth is ten thousand thousand times 9, that is XCMM, i. e. XC thousand thousand CCCLIX thousand, 684, that is VICLXXXiiij."

It is obvious the word million had no popular currency at this period.

SAMUEL T. HAMCOMB.

ORIGIN OF THE WORD "ONTONAGON." We are informed by an eighteen-years' resident of the town of Ontonagon in the north of Michigan, near the border of Lake Superior, that a legend says an In-

dian maiden was sent to the stream to bring a bowl of water. She stepped into the canoe floating on the side of the stream and reaching over the side to scoop up the clear water, the swift current forced the bowl from her hand and it went floating down with the current. The maiden, with uplifted hands, exclaimed *Ontonagon ! Ontonagon !* "I've lost my bowl ! " "I've lost my bowl ? " CLARK.

WHO MADE THE FIRST BOAT. A correspondent (T. H.) asked this question several months ago, and we copy for his information from the "Testament of the Twelve Patriarchs," *Zebulun* 6 :

"I was the first who made a boat to sail upon the sea, for the Lord gave me understanding and wisdom therein ; and I let down a rudder behind it, and I stretched a sail upon the upright mast in the midst ; and sailing therein along the shore, I caught fish for the house of my father until we went into Egypt ; and through compassion I gave fish to every stranger. And if any man were a stranger, or sick, or aged, I dressed the fish well and boiled them, and offered them to all men as every man had need, bringing them together and having compassion upon them. For five years I caught fish, and gave to every man whom I saw, and brought sufficient to the house of my father."

MDCLXVI=1666. (Vol. V, p. 148.) We do not think the era adopted by the Materialist (1666) had anything whatever to do with the Roman numerals (IVXLCDM) reversed, but regard this fancy as a coincidence. Will some Materialist explain why they date their era E. M. (Era of Materialism) from 1666 ?

There was a tract in the possession of Mr. Wrangham, England, entitled *Romæ Ruina Finalis, Anno Dom. 1666*. Some apocalyptic student discovered the date in "ALEXANDER EPIS-COPUS ROMÆ" : L (50), X (10), D (500), I (1), C (100), V (5), M (1000) = 1666. This contained the full complement of the Roman numerals. Hence Rome was to fall in 1666.

HIGHEST PEAK IN THE WORLD. According to Gaskell's "New Family Atlas," Mount Hercules in New Guinea, is now claimed to be the highest peak in the world. The height is given as 32,768 feet ; while the same authority gives Mount Everest, of the Himalaya Range, as 29,002 feet ; so that Mount Hercules leads the world as the highest peak by 3,766 feet ; or Mount Hercules is 6 miles high, and 1088 feet more.



**THE GREEK ANTHOLOGIES.** What are the Greek anthologies which are so frequently referred to and quoted from? A. K. G.

The Greek anthologies (*Blumenlesen*) are collections of small poems, chiefly epigrams, of various authors. Many of the pieces are remarkable for their beauty and simplicity in thought, and their peculiar terms of expression. These collections began to be compiled during the decline of Greek literature. Several of these collections were made before the fall of Carthage, but seem to have been formed with more reference to their historical value of the inscriptions than to their poetical merit. The collection of Polemo Periegetes was of this early class, which are entirely lost. Next to these the first of which we have any knowledge was made by Meleager of Gadara in Syria, B. C. 100 nearly. It was entitled *Stéphanos*, the crown or karland, and contained the better pieces of 46 poets, arranged alphabetically. The next collection was by Philippus of Thessalonica, in the time of Trajan, with the same arrangement. Soon after, under Hadrian, about A. D. 120, a collection of choice pieces was formed by Diogenianus of Heraclea. About 100 years later, Diogenes Laertius gathered a collection of epigrams composed in honor of illustrious men. From the variety of meters in them, it was styled *Pámmeton*. In the 2d or 3d century Strato of Sardis published a compilation, including most of the poets embraced in the anthology of Meleager, and some of those embraced in the works of Phillipus, together with several others. It was entitled *Paidikè Moûsa*. But that which may be considered as a third anthology was published in the 6th century by Agathias of Myrina, who was one of the most eminent epigrammatists after the time of Constantine. This collection bore the title of *Kûklos*, and consisted of seven books, into which the pieces were distributed according to their subjects. In the 10th century a fourth collection was made by Constantine Cephalas, of whom nothing else is known. In preparing it he made use of the preceding compilations, especially that of Agathias, but inserted pieces of ancient authors not introduced in them. The epigrams and other pieces are arranged according to subjects, in fifteen sections. Finally, in the 14th century, Maximus Planudes, a monk of Constantinople, the same person who collected the fables of Æsop, formed a fifth anthology. Planudes arranged the pieces, included in his collection, in seven distinct books.

The two last-mentioned collections, that of Cephalas and that of

Planudes, are the only anthologies now extant. That of Planudes was first printed in 1494, and the collection of Cephalas was, after that, almost entirely forgotten. In 1606, a manuscript copy of Cephalas was found by Claude Saumaise (Claudius Salmasius) in the library at Heidelberg.

**THE SPORTSMAN'S PROBLEM.** (Vol. VI, p. 235.) The conditions of this problem are inconsistent, as the solution will show.

If 5 be added to  $\frac{1}{3}$  of the birds I took last year, it will make  $\frac{1}{2}$  of the number I have taken this year; but if from 3 times this last half, 5 be taken, you will have the number taken last year. How many did I take each year? JONAS.

Let  $x$  = the number taken this year, and  $y$  = the number last year.

$$\frac{x}{2} = \frac{y}{3} + 5, \quad y = \frac{3x}{2} - 5.$$

Substituting in the first equation the value of  $y$  in the second,

$$\frac{x}{2} = \frac{x}{2} - \frac{5}{3} + 5. \quad \therefore 3x - 3x = 30 - 10. \quad 0 = 20.$$

This is an absurd equality, when we conclude that there exists no values of  $x$  and  $y$  which satisfy the two equations.

**PROBLEM OF EXPENDING 1000 FRANCS.** (Vol. VI, p. 235.) There are five solutions, and *only five*, to this problem.

A company of men and women expend at a feast 1000 francs. The men pay each 19 francs, and the women 11 francs. How many men and how many women are there? L. O. K.

- |     |                      |
|-----|----------------------|
| (1) | 4 men and 84 women.  |
| (2) | 15 men and 65 women. |
| (3) | 26 men and 46 women. |
| (4) | 37 men and 27 women. |
| (5) | 48 men and 8 women.  |

**A GNOMON IN GEOMETRY.** (Vol. VI, p. 236.) A gnomon in geometry is the area between two rectangles, when one lies within the other, and having the boundaries of two sides common. Construct a rectangle (say 9 by 16), A B C D; from C, on C D, lay off C E equal to 12; from C, on C A, lay off C F equal to 7; complete a rectangle F C E G, within in A B C D, equal to 7 by 12; then the area of the gnomon is  $(9 \times 16) - (7 \times 12) = 60$ .

**SATURDAY AN UNLUCKY DAY.** Has any other day than Friday appeared to be an "unlucky day"? **LEWIS HOLDEN.**

The following record shows that for 176 years *Saturday* has been a fatal day to the Royal family of England, the following having died on that day:

William III,	March 18, 1702	George IV,	June 26, 1830
Queen Anne,	August 1, 1714	Duchess of Kent,	March 16, 1861
George I,	June 19, 1727	Prince Albert,	Dec. 14, 1861
George II,	Oct. 25, 1760	Princess Alice,	Dec. 14, 1878
George III,	Jan. 29, 1820		

**THE TRADITION OF THE MOON AS ONCE COMING NEAR THE EARTH.** What gave rise to the story told us by our ancestors, that the moon, once on a time came very near the earth? **LLEWELLYN.**

There was such a tradition that the moon had been within reaching distance of this earth. We have heard old people in New England relate the same tradition, and recently we read a chapter in a very old book, "The Testament of the Twelve Patriarchs," *Naphthali* 5, that possibly may have given rise to such story. We copy it here for the information of this questioner:

"In the fortieth year of my life, I saw on the Mount of Olives, at the east of Jerusalem, that the sun and the moon were standing still. And behold Isaac, the father of my father, saith to us, Run and lay hold on them, each one according to his strength; and he that seizes them, his shall be the sun and moon. And we all of us ran together, and Levi laid hold of the sun, and Judah outstripped the others and seized the moon, they were both of them lifted up with them. And when Levi became as a sun, a certain young man gave to him twelve branches of palms; and Judah was bright as the moon, and under his feet were twelve rays. And Levi and Judah ran and laid hold each of the other. And lo, a bull upon the earth having two great horns, and an eagle's wings upon his back; and we wished to seize him but could not. For Joseph outstripped us, and took him, and ascended up with him on high. And I saw, for I was there, and behold a holy writing appeared to us, saying: Assyrians, Medes, Persians, Elamites, Gelachæans, Chaldeans, Syrians, shall possess in captivity the twelve tribes of Israel."

Undoubtedly there is an interpretation of this record that would explain it as to the future of the twelve tribes; like Joseph's dream of the eleven stars making obeisance to him, the sun and moon standing still at the command of Joshua, and others; the true meaning does not appear upon the surface.

**TOUR OF THE CHESS KNIGHT.** (Vol. V, pp. 222, 234, 245.) I was formerly much interested in chess and problems pertaining thereto. The tours given in your pages revives those bygone days. The quotation from Shakespeare puzzled me as to where to begin, but your contributor (G. S. C., p. 245) has given it correct, as reference to the play *King John* shows. I send you a tour arranged by one Percy Searle in the palmy days of chess. **LEANDER L. THORNE.**

board	est	were	rious	nev	thy	might	tor
umphs	vic	with	on	the	hail	er	troops
lead	quered	price	rals	glo	ier	vic	thou
to	tri	the	man	his	gene	to	er
che	ed	won	of	on	by	than	less
his	ry	up	wars	y	blood	ring	ty
aid	while	mor	le	lone	tain	blood	na
hail	on	un	thou	phy	po	a	cer

The publishers will add here that we will send Vol. I, Nos. 1-20, free to the first person from whom we receive the correct answer to this tour.

**JORDANO BRUNO'S TRIADS.** Bruno was roasted alive Feb. 17, 1600-

“Efficiunt totum Casus, Natura, Voluntas,  
Dat triplicem mundum Deitas, Natura, Mathesis,  
Hinc tria principia emanant Lux, Spiritus, Unda,  
Est animus triplex Vita, Sensu, Ratione.”

## QUESTIONS.



1. Can some reader inform me who is the author of, and where the poem can be found, entitled *Sometime*. The first lines I give from memory :  
P. M. C., Newark, N. J.

" God's plans like lilies pure and white unfold,  
We must not tear the close shut leaves apart,  
Time will reveal the calyxes of gold."

2. From whom does the botanical herb *John's-wort* derive its name, and why?  
Z.

3. Was Robert B. Thomas, of almanac fame, a near relative of Isaiah Thomas, also a publisher of almanacs?  
MARS.

4. Burritt's " Geography of the Heavens," p. 132, says there were ten stars in the zodiacal sign *Capricornus* (the Goat), known as the " Tower of Gad " ; which are the stars by name, and why so called?

Why is the constellation *Delphinus* (the Dolphin) known by the name of " Job Coffin " ?

Also, why are the three stars in Orion—the Ell or Yard—known as " Jacob's Staff " ?  
A. J. BOYLE.

5. The following quotation is credited to Virgil ; where is it found?

" Macte nova virtute puer ; sic itur ad astra ;  
Dile genite, et geniture, Deos."

" Go on spotless boy, in the paths of virtue ; it is the way to the stars ; offspring of the gods thyself ; so shalt thou become the father of gods."

To whom is this addressed ?

HULDAH B. BENSON.

6. What was the deficiency in Babbage's Calculating Machine, that it was not manufactured and put on sale?  
C. S.

7. How do the dimensions of the Great Eastern compare with the best estimates of Noah's Ark, based on the dimensions as given in the Bible?  
HANNAH.

8. What was the largest newspaper ever printed in the United States ?

Has Congress ever granted assistance for the construction of the " Three Americas Railway " an enterprise proposed by Hinton Rowan Helper, to build a railroad from the Great Lakes south through North, Central, and South America ?  
XENIA.

9. Ludolph Van Ceulen, in his Dutch work on the circle, closes his speculations with these Latin quotations. Please give us a free translation :  
TYRO.

" *Constat ergo numeros rite esse inventos.*"

" *Cujus rei soli Deo debetur gloria.*"

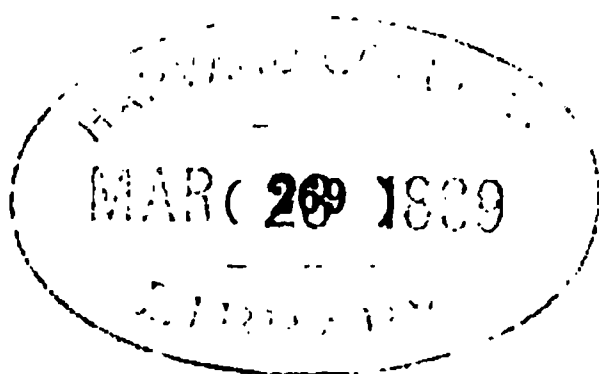












MISCELLANEOUS

NOTES AND QUERIES,

WITH ANSWERS.

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*"The soul has three vehicles : first, etherial ; second, aerial ; third, terrestrial."*  
—THOMAS TAYLOR.

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*The Kabbalah.*

—o—o—o—

Several times in your pages you have mentioned the Kabbalah. I would like to know more of it and its import. OSCAR C. WEBB.

The Kabbalah may be defined as the esoteric Jewish doctrine, applied to the Scriptures to bring out its concealed meaning. It is generally under four heads : Practical, Literal, Unwritten, and Dogmatic. The second, or Literal, is the most important, and is divided into three divisions : Gematria, words of similar numerical value ; Notaricon (a word meaning shorthand writer), of which there are two kinds, one, each letter of the word is taken as the initial of another word, the other form is the exact reverse ; Temura, is when the letters are permuted. We will here give some examples of each class :

*Gematria.* The letters of the word MTTRVN, *Metatron*, according to the value assigned to each by the Hebrew, sum 314, and also the letters of the name of the Deity SHDI, *Shaddai* sum 314 ; hence the name of the angel is taken for the Deity and *vice versa*. Metatron is said to have been the conductor of the children of Israel through the wilderness, and of whom it is recorded that God said : " My name is in him " (Ex. xxiii, 21). The Gematria of phrases is as follows : BA SHILH, *Yeba Shiloh*, " Shiloh shall come " (Gen. xlix, 10),

sums 358 ; which is also the sum of the letters in MSHICH, *Messiah* (Dan. ix, 25). Again, VHNH SHLSHH, *Vehenna Shalisha*, " And lo, three men " (Gen. xviii, 2), sum 701 ; this amount being equal to the sum of ALV MIKAL GBRIAL VRPAS, *Elo Mikhael, Gabriel Ve-Raphael*, " These are Michael, Gabriel, and Raphael."

*Notaricon.* The following will illustrate this form of the Kabbalah :  
The first of Genesis is BRASHITH, *Bersahith*, " Genesis." Each letter is made the initial of a new word :

BRASHITH RAH ALHIM SHIQBLV ISHRAL THVRH,  
*Besrashith Rahi Elohim Sheyequebe'lo Israel Torrah,*

" In the beginning God saw that Israel would accept the law."

In this connection we will give six interesting examples of notaricon formed from this same word " BRASHITH," by Meir Ben Moses, a Jewish Kabbalist, who embraced the Christian faith in 1665, and took the name of Prosper Rugere :

BN RVCH AB SHLVSHTHM ICHD THMIM,  
(1) *Ben Ruach, Ab, Shaloshethem Yechad Themim,*  
" The Son, the Spirit, the Father, Their Trinity, Perfect Unity."

BN RVCH AB SHLVSHTHM ICHD THOBVDV,  
(2) *Ben, Ruach, Ab, Shaloshethem Yechad Thaubodo,*  
" The Son, the Spirit, the Father, ye shall equally worship their Trinity."

BKVRI RASHVNI ASHR SHMV ISHVO THOBVDV,  
(3) *Bekori Rashuni Asher Shomo Yeshuah Thaubodo,*  
" Ye shall worship My First-born, My First, whose name is Jesus."

BBVA RBN ASHR SHMV ISHVO THOBVDV,  
(4) *Beboa Rabban Asher Shamo Yeshuah Thaubodo,*  
" When the Master shall come, Whose Name is Jesus, ye shall worship."

BHTLH RAVIH ABCHR SHTHLD ISHVO THASHRVH,  
(5) *Bethula Rrriah Abachar Shethaled Yeshuah Thashroah,*  
" I will choose a virgin worthy to bring forth Jesus, and ye shall call her blessed."

BOVGTH RTzPIM ASTHTHR SHGVPI ISHVO THAKLV,  
(6) *Beaugoth Ratzephim Asvtar Shegopi Yeshuah Thokelo,*  
" I will hide myself in cake (baked with) coals, for ye shall eat Jesus, My Body."

The kabbalistic importance of these sentences as bearing on Christianity all must judge for themselves.

The second form of Notaricon is the exact reverse of the first. By this the initials, or finals, or both, or medials, of a sentence, are taken to form a word, or words. Thus the Kabbalah is called

CHKM<sup>H</sup> NST<sup>H</sup>RH,  
*Chokhmah Nesthrah,*  
 "The Secret Wisdom,"

If the initials of these two words be taken, CH and N, they form the word CHN, *Chen*, "Grace," which is the second form of Notaricon. Similarly, from the initials and finals of the words, Deut. xxx, 12,

MI IOLH LNV HSHMIMH,  
*Mi Iaulah Lenu Ha-Shamayimah,*  
 "Who shall go up for us to heaven?"

are formed from the initials MILH, *Milah*, "Circumcision"; from the finals IHVH (the tetragrammaton), *Jehovah*, implying that God has ordained that circumcision is the way to heaven. Again the tetragrammaton is found to form the initials of the four Hebrew words which are translated "Let the heavens rejoice, and the earth be glad" (Ps. xcvi, 11.) Also, the same four-lettered name is found to be the finals of the four Hebrew words translated "They will say to me, what is his name?" (Ex. iii, 13.) There are many more illustrations in the Hebrew Scriptures, but let this suffice.

Temura is the third form of Kabbalah which is permutation. The alphabet is bent exactly in half, in the middle, and one half is put over the other; and then by changing alternately the first letter or the first two letters at the beginning of the second line, 22 commutations are produced. These are called "Table of Combinations of TzIRVP, *Tsiruph*." The method called Albath is formed thus:

11	10	9	8	7	6	5	4	3	2	1
K	I	T	CH	Z	V	H	D	G	B	A
M	N	S	O	P	Tz	Q	R	SH	TH	L

These Hebrew letters are found in Psalm cxix, dividing it into eights. There are numerous examples of the application of Albath to peculiar words in the Hebrew writings, which will form the subject of a second chapter on this mode of interpretation.

**PURE SAXON-ENGLISH.** The late William Barnes, author of the Dorset poems, a poet and clergyman, also a writer on grammar, says :

“ What we want for the pulpit, as well as for the book, and the platform, and the people, is a pure, homely, strong Saxon-English of English stems, such as would be understood by common English minds and touch English hearts.”

Here is a specimen of his own workmanship under these conditions.

“ The mindstrength and body worksomeness of the Saxon, which are of great might for good when well spent, need a training in wisdom to keep them from mischief. The Saxon’s mind . . . . is destructive, and his sprackness wants the guidance of refined thought. Thence it is that seats put out at towns are often wantonly wrenched asunder, that bars and stiles are notched by bearers of an axe, that the guide-post is upset, and-coping-stones are pushed off bridge walls, and trees and shrubs are damaged, and the limb sprackness is spent in whittling sticks.”

In his enthusiasm and his desire to get rid of foreign elements from the English language, Mr. Barnes suggested that it would be very easy to substitute genuine Saxon words for many of the classical or other foreign words which have found their way into the English vocabulary. Thus, instead of masculine and feminine he would speak of the *carl sex* and the *quean sex*, and for neuter would use *unsearly*. Some of his proposals will be found curious. The following list will show some of his proposed improvements :

Active,	Sprack.	Euthusiasm,	Faith-heat.
Altercation,	Brangle.	Generations,	Child-teams.
Ambassador,	Statespellman.	Haughty,	Overwindy.
Annals,	Year-bookings.	Horizon,	Skyedge.
Appendix,	Hank matter.	Magnificent,	High deedy.
Botany,	Wortlore.	Omnibus,	Folkwain.
Butler,	Cellar thane.	Perambulator,	Push-waining.
Criticism,	Deemsterhood.	Quadrangle,	Fourwinkle.
Democracy,	Folkdom.	Statics,	Weightcraftlore.
Electricity,	Fire-ghost.	Superanuated,	Overyeary.
Epidemic,	Manqualm.	Telegram,	Wire-spell.

Mr. Barnes wrote a short treatise on logic, of all subjects in the world, in exclusively English wording. With him logic was *rede-craft*, and a syllogism was a three-stepped *redeship*, or a redeship of three-thought puttings. His syllogisms have an exceedingly odd appearance, as follows :

No horned beast is flesh-eatsome ;  
 Every dog is flesh-eatsome ;  
*Therefore*, No dog is a horned beast.

Here is another three-stepped redeship :

Every cow is grass-eatsome ;  
 Every cow is two-horned ;  
*Therefore*, Some one two-horned thing is grass-eatsome.

Here are two more specimens, which are sufficient :

Every two-horned beast is cud-chewsome ;  
 Every two-horned beast is grass-eatsome ;  
*Therefore*, Some grass-eatsome beast is cud-chewsome.

Every cud-chewsome beast is cloven-footed ;  
 Every two-horned beast is cud-chewsome ;  
*Therefore*, a cloven-footed beast is two-horned.

For a further development of Mr. Barnes's system of logic, see Archibald Ballantyne's "Wardour-Street English," in *The Bookmart*, Vol. VI, No. 67, pp. 381-387.

"SPELIN"—A UNIVERSAL LANGUAGE. Prof. George Bauer of Agram, Austria, has invented a universal language which he claims is simpler than Volapük, and much more euphonious.

"SPELIN YIKO SPAZ YOMAV."

"The derivation of the word is : *S+pe+lin*.—*S* at the beginning of words is a symbol of collectiveness. *Pe* as a prefix means 'each,' hence *spe* means 'all,' *lin*=language, from the Latin "lingua" (with which we are familiar in 'linguist'). The word is pronounced *Spay-linn* (i like i in *machine*, but shorter.)"

The vowel scale is *i, e, a, o, u, æ*, arranged according to the acoustic series, as being the natural order ; i like i in *machine* ; e like *ey* in *they* ; a like *a* in *father* ; o like *o* in *go* ; u like *oo* in *moon* ; æ like *u* in *but*. The numerals are :

1	ik,	4	in,	7	if,
2	ek,	5	en,	8	ef,
3	ak,	6	an,	9	af

An s affixed to each makes them 10, 20, 30, etc. 100 is oc, 200 is ekoc, 400 is inoc ; 1,000 is uk, 100,000 is ocuk, 1,000,000 is lion ; or, 1,560,716 is lion enoc ansuk ifoc iksan.  $\frac{1}{8}$  is iksaktil ak. March 1, 1889, is put 1889, *luak*, 1. To double is yekœli ; to treble is yakœli.

All nouns begin with a consonant. If we let *v* stand for a vowel, and *c* for a consonant, the forms which they take are : *cvc* (consonant, vowel, consonant ; the normal type) ; *cvcc*, *ccvc*, *ccvcc*, *cvvc*, *ccvvc*, *cvvcc*, *ccvvcc*. The plural of nouns always ends in *æs*. [There are no case variations ; position distinguishes this.

For adjectives of geographical name and the four quarters of the heavens, *is*, *ec*, *ac*, *oc*, *uc*, are used ; *ic* for all countries in Europe, *ec* in America, *ac* in Asia, *oc* in Africa, *uc* in Australia :

The names of countries in Europe end in *im* ; in America in *em* ; in Asia in *am* ; in Africa in *om* ; in Australia in *um* ; while the five grand divisions of the globe are *Sim*, *Sem*, *Sam*, *Som*, *Sum*.

French,	Fransic,	Europe,	<i>Sim</i> ,
Yanidic,	Netherlander,	America,	<i>Sem</i> ,
Yozinlic,	Englishwomen,	Asia,	<i>Sam</i> ,
England,	Inlim,	Africa,	<i>Som</i> ,
Germany,	Dutim,	Australia,	<i>Sum</i> .
West Indies,	Indem,		
East Indies,	Indam,		

Subject, adjective, verb, adverb, direct object, numeral, indirect object, pronoun.

Pat gudir give ede bukœs ak yayuz al.

The good father gave three books to his boy yesterday.

It requires 222 letters to print the "Lord's Prayer" in Volapük, and only 191 in Spelin ; while it requires 52 words in Volapük, and 58 in Spelin, there being no words of more than three syllables in the latter, while there are five words of more than three syllables in the former. A condensed translation in pamphlet can be obtained of Chas. T. Strauss, 424 Broadway, New York.

**OCTONARY ARITHMETIC.** Who was the first person to endeavor to introduce an octonary (8) system of arithmetic in place of the decimal (10) system? G. S. C.

William B. Taylor, in his "Report on Weights and Measures," made to the American Pharmaceutical Association, in 1859, gives the best account of the first attempt to supersede the decimal system in Sweden, and, so far as we are aware, the first anywhere. He says :

"The only correct account we have been able to obtain of the important movement of Charles XII toward superceding the decimal by the octonary system, throughout Sweden, is that contained in a volume entitled 'A Compendium of the Theological and Spiritual Writ-

ings of Emanuel Swedenborg' (royal octavo), published by Crosby & Nichols, (Boston,) 1854. In the Life of Swedenborg prefixed to the 'Compendium,' it is said : 'In 1719, he published four works : First, *A Proposal for fixing the value of Coins and determining the Measures of Sweden, so as to suppress Fractions, and facilitate Calculations* ; After this he was commanded by his sovereign to draw up an octonary computus, a mode of computing by eights,) which he completed in a few days, with its application to the received divisions of Coins, weights, and measures ; a disquisition on cubes and squares, and a new and easy way for extracting roots ; all illustrated by appropriate examples.' ("Life of Swedenborg," p. 9.) As Swedenborg devised for his "octonary computus," both a set of characters and of new names, we were exceedingly anxious to have enriched this report with their representation. We have failed, however, to find any clue to these early publications in any of the public libraries or private collections to which we have had access. The only additional reference to the subject in the volume above referred to is contained in a letter from Swedenborg to M. Nordberg, written after the death of Charles XII, which appears to detail the monarch's first conception of a project of a reformation in the popular system of numeration. An extract, giving all that relates to the subject of octonary computation, is here copied :

*Letter of M. Swedenborg, Assessor of the Board of Mines, to M. Nordberg, Author of the History of Charles XII.*

"SIR : As you are now actually engaged on the life of Charles XII, I avail myself of the opportunity to give you some information concerning that monarch which is perhaps new to you, and worthy of being transmitted to posterity. \* \* \* Conversing one day with the king upon arithmetic, and the mode of counting, he observed that almost all nations, upon reaching 10, began again ; and those figures which occupy the first place never change their value, while those in the second place are multiplied ten-fold, and so on with the others ; to which we added that men had apparently begun by counting their fingers, and that this method was still practiced by the people ; that arithmetic having been formed into a science, figures had been invented, which were of the utmost service ; and, nevertheless, that the ancient mode of counting had always been retained, in beginning again after arriving at 10, and which is observed by putting each figure in its proper place.

The king was of the opinion that had such not been the origin of our mode of counting, a much better and more geometrical method might have been invented, and one which would have been of great utility in calculation, by making choice of some other periodical number than 10. That the number 10 had this great and necessary inconvenience,—that when divided by 2 it could not be reduced to the



number 1, without entering into fractions. Besides, as it comprehends neither the square, nor the cube, nor the fourth power of any number, many difficulties arise in numerical calculations. Whereas, had the periodical number been 8, or 16, a great facility would have resulted, the first being a cube number of which the root is 2, and the second a square number of which the root is 4 ; and that these numbers being divided by 2, their primitive, the number 1 would be obtained, which would be highly useful in regard to money and measures, by avoiding a quantity of fractions. The king, after speaking at length on the subject, expressed a desire that we should make a trial with some other number than 10. Having represented to him that this could not be done unless we invented new figures, to which also names different from the ancient ones must be given, as otherwise great confusion would arise, he desired us to prepare an example in point. We chose the number 8, of which the cube root is 2, and which being divided by 2 is reduced to the primitive number 1. We also invented new figures, to which we gave new names, and proceeded according to the ordinary method. After this we applied them to the cubic calculations, as well as to money, and to measures. The essay having been presented to the king he was pleased with it."

The next person who has produced a system on the basis of 16 is John W. Nystrom, in his work "The Tonal System," described in this magazine, Vol. V, p. 77.

AGES OF JACOB'S SONS. I have searched several works to find the ages of the twelve sons of Jacob. I can find only the age of Joseph, 110 years, given in the Bible, Genesis L, 26. Does any book give the ages of the other eleven sons? BEN.

"BEN" will find their ages given in the "Testament of the Twelve Patriarchs," as follows :

Reuben,	.	.	125	Dan,	.	.	125
Simeon,	.	.	120	Naphtali,	.	.	132
Levi,	.	.	137	Gad,	.	.	127
Judah,	.	.	119	Asher,	.	.	120
Issachar,	.	.	120	Benjamin,	.	.	120
Zebulon,	.	.	114	Joseph (Gen. L, 26),	.	.	110
<hr/>				<hr/>			
735				734			

$735 + 734 = 1469$ . Average age,  $122\frac{5}{12}$  years.

RAGNARÖK. (Rāg'nā'rök.) [Old Norse *Ragnarökr*, twilight of the gods.] The "last day," the period of the destruction of the universe, when the whole creation, mankind, giants, and gods, are to perish in a shower of fire and blood. Vidar and Vali alone will survive the conflagration, and will reconstruct the universe on an imperishable basis.

QUOTATIONS IN THE NEW TESTAMENT.—THE GOLDEN RULE. (Vol. IV, p. 340.) You quote the Golden Rule from a translation of the teachings of Confucius, by M. R. K. Wright. What is James Legge's translation of the Golden Rule? What other classical and apocryphal quotations are there in the New Testament? ANDREW.

The Golden Rule as given by James Legge's work, "The Chinese Classics," New York edition, 1887, *Confucian Analects*, Bk. V, chap. XI, is as follows :

"What I do not wish men to do to me, I also wish not to do to men."

There are many other quotations, classical and apocryphal, in the New Testament, some of which are the following :

1. "All things whatsoever ye would that men should do to you, do ye even so to them."—(Matt. VII, 12 ; Luke VI, 31.) Confucius's *Analects* V, 11 ; XV, 23.

2. "The Cretians *are* always liars, evil beasts, slow bellies."—(Titus I, 12.) Callimachus's *Hymn to Jupiter*, 8, according to Theodoret ; and from Epimenides, according to Jerome, Chrysostom, and Epiphanius.

3. "Let not the sun go down upon your wrath."—(Ephesians IV, 26). Pythagoras's *Symbols*.

4. "Against such there is no law."—(Galatians V, 23.) Aristotle's *Polemic*s III, 8.

5. "Evil communications corrupt good manners."—(I Cor. XV, 33.) Menander's *Thais* ; from Euripides, according to others.

6. "For we are also his offspring."—(Acts XVI, 28.) Aratus's *Phenomena*, 5 ; Cleanthes' *Hymn to Jupiter*, 4.

7. "Eye hath not seen, nor ear heard, neither have entered into the heart of man, the things which God hath prepared for them that love him."—(I Cor. II, 9.) "Ascension and Vision of Isaiah." Jerome, *Esaias* LXIV, 4.) (See McC. & S., VIII, p. 1070.)

8. "For the wrath that is come upon them to the uttermost."—(I Thess. II, 16.) "Testament of the Twelve Patriarchs," *Levi* 6.

9. "Awake thou that sleepest, and arise from the dead."—(Eph. V, 14.) "Testament of the Twelve Patriarchs."

10. "Lord, they have killed thy prophets, and digged down altars ; and I am left alone, and they seek my life."—(Romans thine "Prophecy of Elias."—(See McC. & S., III, p. 140.) VI. 2 )

11. "Behold, the Lord cometh with ten thousand of his saints, to execute judgment upon all, and to convince all that are ungodly among them of all their ungodly deeds which they ungodly committed, and of all their hard *speeches* which ungodly sinners have spoken against him."—(Jude 14-15.) "Prophecy of Enoch" II, 1.

12. "The Lord rebuke thee."—(Jude 9.) "Assumption of Moses." Fabricius, *Pseudipigraphia* I, 839 847. (See McC. & S., VI, p. 686.)

13. "Neither circumcision availeth anything, nor uncircumcision."—(Gal. VI, 12.) "Assumption of Moses." Fabricius's *Pseudipigraphia*, I, 836. (See McC. & S. VI, p. 686.)

14. "Was sawn asunder," with a wooden saw. — (Heb. XI, 37.) "Ascension and Vision of Isaiah" I, 9; V, 11; XI, 4. Justin Martyr's *Dialogue c, Trypho*, Paris, p. 349. (See McC. & S., VIII, p. 1069.)

15. "I will open my mouth in parables, I will utter things which have been kept secret."—(Matt. XIII, 35.)

This quotation is not found in the Old Testament, the writer probably quoting from some book now lost.

16. "If I be lifted up from the earth, I will draw all *men* unto me." (John XII, 32.)

This saying is found in the Zoroasterian writings of the ancients without the supplied word "*men*."

Paul is supposed to have been in possession of the lost book of "Jannes and Mambres," from which he received the information relative to Pharaoh's magicians who "withstood Moses" (II Tim. III, 8).

For a full account of these and other quotations, see C. H. Toy's "Quotations in the New Testament"; McClintock & Strong's Cyclopædia, Kitto's, and Calmet's, Dictionaries.

ALMANACS. Sir Richard Phillips' 'Million of Facts' says that almanacs were first published in 1491 by Martin Hekus, at Buda, and that the first almanac in England was printed at Oxford in 1673. The same work says, Mr. Wood gathered from it the facts, that 30,000 copies were printed, besides another sheet almanac which sold for twopence each for that same year. On account of the novelty of the title they were all sold. The first printed almanacs were not calculated for one year, but for several years in advance. Their great features were astrological predictions. The oldest almanac, in existence is claimed to be for the year 1491, which was printed at Augsburg, octavo size. It bears neither the name of the writer nor printer. The title-page gives the following description of its contents:

"This small book is divided, as the year is supposed to be, into months. It teaches further when to use food and drink, and when to take physic, according to the nature and influence of the stars: when to bathe, and how to regulate pregnant women who are fruitful: how

children are to be educated, and how to guard against the plague. It is, therefore, a book of medicine."

The work is written throughout in German rhyme, and is plentifully adorned with rude wood-cuts.

Michael Nostradamus, the celebrated astrologer, wrote an almanac, in the style of Merlin, in 1556.

The following are some of the early foreign almanacs according to Haydn's " Dictionary of Dates " :

John Somer's Calendar,	1380	Moore's Almanac,	1713
One at Lambeth Palace,	1460	Lady's Diary,	1705
First printed one at Buda,	1491	Season on the Seasons,	1735
First printed in England,	1497	Gentlemen's Diary,	1741
Tybalt's Prognostications,	1433	Nautical Almanac, Maskelyne,	1767
Almanac Liégeois,	1635	British Imperial Kalendar,	1809
Lilly's Ephemeris,	1644	Hone's Every-Day Book,	1826
Poor Robin's Almanac,	1652	Brit. Almanac and Companion,	1828
British Merlin,	1658	Anniversary Calendar, Kidd,	1832
Edinburgh Almanac,	1683	Book of Almanacs, DeMorgan,	1851
Connaissance des Temps,	1689	Chambers' Book of Days,	1862-63



**TRAGEDY.** That of *Alcestis* was first represented by Thespis, the first tragic poet at Athens, 536 B. C. Prizes were instituted and the first one gained by Æschylus, 486 B. C. Another prize carried off by Sophocles, 470 B. C. Another won by Euripedes, 442 B. C. Also, another by Astydamus, 377 B. C.—*Arundelian Marbles*.

**VENISON FEAST.** At a venison feast, Sir Joshua Reynolds addressed his conversation to one of the company who sat next to him, but, to his great surprise, could not get a single word in answer, until at length his silent neighbor, turning to him, said, " Joshua, whenever you are at a venison feast, I advise you not to speak during dinner time, as in endeavoring to answer your question, I have just swallowed a fine piece of fat without tasting its flavor."

**CHINESE MODE OF FISHING.** The following ingenious mode of taking fish is said to be practised by the Chinese. A flat board, painted white, is fixed to the side of a boat, at an angle of about 45 degrees, the edge inclining towards the water. On moonlight nights the boat is so placed that the painted board is turned to the moon, and the rays of light striking on the whitened surface, give it the appearance of moving water, so that the fish are tempted to leap on it, as on their own element, when the boatman, raising the board with a string, turns the fish into the boat.

### *Problems and Answers.*

Archimedes is said to have calculated the number of grains of sand contained in the *Cosmos* — the sphere of which the earth is the center, and its radius the distance of the sun. How did he calculate the number, and what answer did he obtain? LEON.

Col. T. Perronet Thompson, author of the work, "Geometry without Axioms," has condensed from the "Arenarius" of Archimedes, the method which that philosopher adopted for his arithmetical computations. He takes "a myriad of myriads," or 100,000,000, and uses it precisely as Locke does *million*. Archimedes calls 100,000,000 *monàs deutéron àrithmon* (the unit of the second class), and then takes of these units 100,000,000; this he call *monas trítion àrithmon* (the unit of the third class), and so on. He assumes the diameter of a poppy-seed to be the 40th part of an inch, and then calculates that a sphere of an inch in diameter must contain 6 myriads (60,000) and 4 thousand (4,000), or 64,000 of these seeds. He then assumes that a myriad grains (10,000) of sand are equal in dimension to one poppy-seed, and then proceeds to calculate how many must be in his sphere of 3,000,000 stadia in circumference. He finally made the number to be 1,000 myriads of a myriad of myriads to the 8th power, or

1000,0000,0000,0000,0000,0000,0000,0000,0000,0000,0000,0000,  
0000,0000,0000.

The power of the Greek notation, as exhibited by the letters of the alphabet, were limited to the amount of 9999; but their numerical word *myrias* (myriad), which they represent by M, or *Mu*, augmented the means of notation ten thousand-fold, and enabled them to record by symbols the sum of 99999999. But Archimedes, whose grasp of mind and notion of numbers, was not to be satisfied by calculations so limited as eight places of figures, and he insisted that the numbers of the "sands which *is* upon the sea-shore" were not infinite, but that they were within the power of language. Starting from the point at which arithmetic had reached, he made a myriad myriads the new point of departure, or unit for secondary numbers, and this secondary unit another point for numbers of a third and fourth, and so up to the eighth progression, each added step of progression being represented by eight figures. He then shows that eight of these progressions, or 64 places of figures, would exceed the number of sands which would

be contained in what he called the *Cosmos*, or the sphere of which the earth is the center, and its radius the sun's distance.

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“Pretty girl, with tremulous eyes, if thou knowest the correct method of inversion, tell me what is the number, which multiplied by 3, and added to  $\frac{3}{4}$  of the product, and divided by 7, and reduced by subtraction of  $\frac{1}{4}$  part of the quotient, and then multiplied into itself, and having 52 subtracted from the product, and the square root of the remainder extracted, and 8 added, and the sum divided by ten, yields 2.”

(Vol. VI, p. 251.)

—*Colebrooke*, p. 21.

To a question so complicated we will not keep back the solution.

Statement — Multiplier 3 ; additive,  $\frac{3}{4}$  ; divisor, 7 ; subtractive,  $\frac{1}{4}$  ; square, — ; subtractive, 52 ; square root, — ; additive, 8 ; divisor, 10 : given number, 2.

All the operations are reversed. Proceeding as directed : The known number 2, multiplied by the divisor 10 gives 20 ; subtract the additive 8 leaves 12 ; squaring this for the square root which is 144 ; add the subtractive 52 gives 196 ; extract the square root for the squaring gives 14 ; added to its half 7 gives 21 ; multiplied by the divisor 7 gives 147 ; take  $\frac{3}{4}$  of this multiplicand, which is the same as  $\frac{1}{4} + \frac{3}{4}$  additive, give 84 ; divided by the multiplier 3 gives 28 which is the number sought, and probably the age of the “pretty girl.”

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**WAX FIGURES** have their origin in a period before historical times, and wax works are still quite popular in England. The Romans made portraits out of wax, and in the middle ages many of the images of saints were of the same material.

**TEA IN SCOTLAND** appears to have been known a century later than in England. Sir Walter Scott used to relate, that people were living who recollected how Lady Pumphraston, to whom a pound of fine, green tea had been sent, a rare and valuable present, boiled the same and served it up with melted butter, as condiment to a salted rump of beef ; and complained that no cooking she could contrive “would make these *foreign greens* tender.”

“**LAUNDERED**” — **THE CORRECT WORD.** A correspondent is informed that *laundered*, not *laundried*, is the correct form of the past tense and past participle of the verb *launder*. Were there a verb *to laundry*, the formation of *laundried* might be proper enough. But there is no such verb. Launder holds the field as the verb, according to Webster, and must control. There is a noun *launder*, from which the verb *launder*, and the noun *laundry*, appear to be derived.—*Baltimore Sun*.

**STARS OF THE FIRST MAGNITUDE.** How many stars are there of the first magnitude, and what are their names? JONATHAN.

There are 23 stars of the first magnitude as given by Burritt in his "Geography of the Heavens":

Name.	Constellation.	Name.	Constellation.
Achenar	Eridanus,	Capella,	Perseus,
Acrux,	Crux Australis,	Denebola,	Leo.
Agena,	Centaurus,	Formalhaut,	Piscis Australis,
Aldebaran,	Taurus,	Lyra,	Lyra,
Altair,	Aquila,	Miaplacidus,	Argo Navis.
Antares,	Scorpio,	Pollux,	Gemini,
Arcturus,	Bootes,	Procyon,	Canis Minor,
Arieded,	Cygnus,	Regulus,	Leo,
Benetnasch,	Ursa Major,	Rigel,	Orion,
Betlguese,	Orion,	Sirius,	Canis Major,
Bungula,	Centaurus,	Spica,	Virgo.
Canopus,	Argo Navis,		

Some other astronomers classify some of these as of the second magnitude. We also add here other interesting information relative to the stars, location, names, etc.

*The Nine Nautical Stars* are conspicuous stars lying along the moon's path which are used by nautical men for determining their longitude at sea:

1. Arietis in	Aries,	6. Antares in	Scorpio,
2. Aldebaran,	Taurus,	7. Altair,	Aquila,
3. Pollux,	Gemini,	8. Formalhaut,	Piscis Aus.,
4. Regulus,	Leo,	9. Markab,	Pegasus.
5. Spica,	Virgo,		

*The Great Dipper* is formed by seven bright stars in Ursa Major: Benetnasch, Mizar, Alioth, Megrez, Phad, Merak, and Dubhe.

Also called The Northern Car, The Plough, Charles's Wain, etc.

*The Two Pointers* are Merak and Dubhe, the last two in the bowl of the Dipper, so called because they *point* to the north polar star.

*The Little Dipper* is formed by seven stars in Ursa Minor, and is in similar position in the constellation. *Gamma* and Kochab, in the end of the bowl, are called the *Guards*, because they seem to guard the bear in his march around the pole.

*The Square of Pegasus* is formed by four stars: Algenib, Markab, Scheat, and Alpheratz (in Andromeda).

*The Pleiades* or *Seven Stars* are in Taurus: Alcyone, Celeno, Electra, Maia, Merope, Sterope, and Taygeta. Anthon gives the first name Halcyone. Lempriere gives the sixth name as Asterope.

*The Hyades* are seven stars in Taurus : Ambrosia, Cyrane, Eudoxa, Pasithæ, Plexauris, Psyche, and Pytho. Lempriere gives their names as Ambrosia, Coronis, Eudora, Phaola, Polyxo, Prodice, and Thione. Anthon gives names six from Pherecydes : Æsuia, Ambrosia, Dione, Coronis, Eudora, and Polyxo. Hesiod gives five names : Clæa, Coronis, Eudora, Phæo, and Phæsula.

*The Equinoctial Stars* were formerly Aldebaran in Taurus, and Antares in Scorpio.

*The Solstitial Stars* were formerly Regulus in Leo, and Formalhaut in Piscis Australis.

*The Three Guides* are the stars Algenib in Pegasus, Alpheratz in Andromeda, and Caph in Cassiopeia, so called, because they each lie in the equinoctial colure.

*The Girdle of Andromeda* is formed by Merach, *Mu* and *Nu*.

*The Three Kings* are Alnitak, Anilam, and Mintaka, in Orion. Several appellations are given to these stars :

"Bands of Orion" (Job 38 : 31),	The Golden Girdle,
Jacob's Rod (Gen. xxx, 37).	The Lady's Elwand,
Napoleon,	The Rake,
Orion's Belt,	The Three Stars,
The Buckler,	The Yard Stick,
The Ell and Yard,	The Three Kings.

*The Epaulets of Orion* are Betelguese and Bellatrix.

*The Egyptian X* is formed by five stars. The upper two are Procyon in Canis Minor, and Betelguese in Orion ; the lower two are Naos in Argo Navis, and Phaet in Corvus ; while the central star is Sirius in Canis Major.

Various fanciful names are applied to many stars, some from their location, and some from their significance :

Aldebaran,	The Bull's Eye.	Capella,	The Little Goat.
Antares,	The Scorpion's Heart.	Denebola,	The Lion's Tail.
Alphard,	The Dragon's Heart.	Mira,	Wonderful Star of 1596
Alruccabah,	} The Pole Star.	Regulus,	The Lion's Heart.
Cynosura,		Sirius,	The Dog Star.
Altair,	The Eagle's Heart.	Spica,	The Virgin's Spike.
Arcturus,	The Bear's Tail.	Thuban,	The Dragon's Tail.

The names of the eight satellites of Saturn are Dione, Enceladus, Hyperion, Japetus, Mimas, Rhea, Tethys, and Titan.

The names of four of the six satellites of Uranus are Ariel, Oberon, Titania, Umbriel.



## QUESTIONS.

1. How did the author of "Planetary and Stellar Worlds" spell his own name? My copy has one *l* in it (*Mitchel*), while I have observed in articles in reference to him, since the war, his name is spelt with two *l*'s (*Mitchell*.) A. H.

2. Are the floods known as Noah's, Ducalion's, and the Atlantean deluges, considered to be one and the same? HENRY.

3. I observe that the articles on the Phoenix in the current volume (pp. 248, 253), give the years of its periodical life differently. Clement's account gives it 500 years (*I Corinthians* xii, 5); Herodotus, 500 years (*Euterpe* LXIII); Kenealy, 600 years (*Book of God*, pp. 172, 193, 256); Lactantius, 1,000 years (*Ante-Nicene Library*, xxii p. 216.) How are the accounts reconciled? MYSTIC.

4. What is the god known in mythology as *Cwenila*? X.

5. What is the meaning of *right* as used to designate the *right-hand*? ELPIS.

5. What are the mystical names of the 24 rounds of Jacob's Ladder (Gen. 28, 12). (See Sermon, Manchester, N. H., *Daily Union*, Dec. 31, 1888.) AUDITOR.

6. What was the rank of the Jewish titles, *Rabban*, *Rabbi*, *Rabboni*. (Matt. xxiii, 7; John xx, 16.) SEARCHER.

7. Why was the name of *Luxor* ("more light") given to the city of ancient Thebes? ISAAC T. POLKHORN.

8. In the current volume you give us the Indian word from Eliot's Indian Bible for "kneeling down to him." Please give us the English of these Indian words quoted from their religious books :

(a) "MOOIGNIAZIMOONGO."

(b) "TLAZATZINTILIZTLATLACOLLI."

(c) "SCHIWELENDAMOWITCHEWAGAN."

READER.

9. What is said to be the Marquis of Worcester's Century of Inventions? J. J. J.

10. Who is on record as having the loudest voice, or as being heard the farthest away? BEN.

11. Why did Isaiah Thomas, in his series of Almanacs, date them "Of the Independence of America," to 1791;  
"Of the Independence of United America," to 1796;  
"Of the Independence of United Columbia," to 1799;  
"Of the Columbian Independence," afterwards? JOHN.

12. In Lilly's Almanac for 1654, for the month of August, printed the following line. To whom does the line refer? Z.

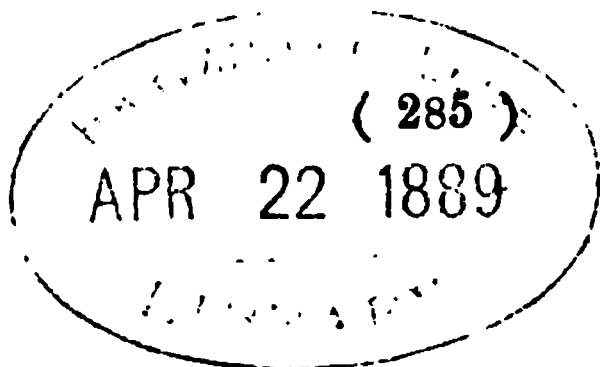
*Hoc in tumbo, jacet presbyter et nebulo,*  
"Here in this tomb lies a presbyter and a knave."











MISCELLANEOUS

NOTES AND QUERIES,

WITH ANSWERS.

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*"He who knows himself knows his own Creator."*—HADEES.

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*The Cubical Stone in King Solomon's Temple.*

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At the building of the Temple in Jerusalem, an unexpected and afflicting event occurred, which threw the Masons engaged in the work into the greatest consternation and confusion. The G. M., H. A. B., had sent to certain F. Cs. 13 stones, and directed that with these they should complete a small *square* near the capestone, that being the only portion of the fabric which remained unfinished. Every stone of the Temple was formed into a *square* containing 5 *equilateral triangles*, each being equal to a cube, lineally, and each side of the triangles being equal to a *plumb-line*. The space, therefore, which remained to be completed, was the last triangle of the last stone, and equal to the  $\frac{1}{8}$  part of the plumb-line, or  $\frac{1}{8}$  of the circle, and  $\frac{1}{18}$  of the triangle, which number is 26, or the Great Name of the Almighty in Hebrew. The 13 stones consisted of all the fragments which remained from the building, and comprised two *cubes* in two divisions. In the first division was contained one cube in an entire piece, and in the second a cube in 12 pieces, namely,  $4\frac{1}{2}$  parts in one piece, 2 parts in 4 pieces, 1 part in 1 piece, and  $\frac{1}{2}$  a part in 6 pieces; total 13 pieces. The F. Cs. perceiving that they could finish the square with the fragments in the second cube, *rejected* the first, observing that the exterior of the stone was marked with certain lines, namely, an equilateral triangle bisected, 3 lines: one side of the cube being the base; 2 squares diagonally bisected, and each having a perpendicular line to the center, 6 lines; 2 straight lines at right angles; and a square diagonally bisected, 2 lines; total 13 *lines*, or 5 surfaces of the cube. Seeing these lines, the Masons thought the stone was split, and therefore useless. It was then thrown aside, and one of their number in contempt struck the cube a violent blow with a wooden mallet (no

tool of iron having been allowed in the building of the Temple) ; the cube instantly divided into 12 parts, the 2d of which bore the same relation to the 1st that the 3d did to the 2d, and the 4th to the 3d ; this being the arithmetical progression of 1, 2, 3, 4. The parts were  $\frac{1}{4}$  of the cube in one piece ;  $\frac{1}{4}$  of the cube divided into  $\frac{1}{8}$ , and  $\frac{1}{16}$  ;  $\frac{1}{4}$  of the cube divided into 2 hexahedrons, and 2 triangles equal to one hexahedron ; and  $\frac{1}{4}$  of the cube divided into 4 pentahedrons. Upon the 4 pieces they discovered a number of hieroglyphics, which, to those Masons who could read them, proved that these characters were in the hand-writing of the G. M. himself, coupled with an inscription to the following effect :

*The Great Problem*—Required, to construct the Temple, Roof, Pinnacles, Porch, Step, and Door, from  $\frac{1}{4}$  of a cube : to consist of 12 parts, each part to bear a proportional relation to the cube, the Temple, and to each other.

Required, from  $\frac{1}{8}$  of a cube, and  $\frac{1}{16}$  of a cube, to construct the Porch of Pillars, the Lintel, and posterior Pillars of the Temple.

Required from  $\frac{1}{4}$  of the cube in  $\frac{3}{8}$  to construct the rests for the Wall, the Pillars, the Bases, and the Steps.

Required, from  $\frac{1}{4}$  of a cube in  $\frac{4}{8}$  to construct the foundation of the Temple, the entire fabric to contain 36 parts or the square of the hexahedron.

Required, to construct, from 2 cubes of the same dimensions, the outer and inner Court, and the Porch of Judgment ; the inner Court to be double the area of the foundation, and to consist of an octagon formed into a square, containing 12 parts ; the outer Court to be double the area of the inner Court, and to consist of 12 parts, each a square ; and the Porch of Judgment to be equal to  $\frac{1}{12}$  of the outer Court, and to consist of 4 parts, each a triangle, the whole comprising 64 parts, or the square of the cube.

These pieces to be constructed separately in the quarries, and to be packed in 3 cubes of equal dimensions, the first containing 36 pieces, the second 8 pieces, and the third 20 pieces ; that is, a square, a cube, and  $\frac{4}{8}$  of a square.

The Throne is a separate piece, to be taken from the interior of the Temple cube, and to consist of  $\frac{1}{8}$  of  $\frac{1}{4}$  of a cube, making in all 65 pieces, which number in the Hebrew means the *Great Secret*.

The F. Cs. carried the broken cube to H. K. of I., who in conjunction with H. K. of T., directed that they should be placed along with the jewels of the craft, on a cubic stone, encrusted with gold, in the center of a deep cavern, within the foundations of the Temple, and further ordered, that the door of this Mysterious Court should be built up with large stones, in order that no one in future should be able to gain admission into this mysterious apartment. At the re-

*building* of the Temple, however, three F. Cs., lately returned from Babylon, in the course of their labors inadvertently stumbled upon this mysterious recess. They discovered the fractured cube, and carried the pieces to Z., J., and H., who recognized in the 4 pieces the \*\*\*\*, and accordingly advanced the F. Cs. to a new degree in Masonry, for having accomplished this discovery. But the *problem* they were unable to solve, or to re-construct the broken cube ; and, in consequence, they declared that a profound mystery involved the whole transaction, which would doubtless some day be revealed to the world. Since that time, the cube had remained fractured, and had continued in that state until the month of October, 1835, when it was re-constructed, and the Temple re-built by Robert Tytler, M. D., Surgeon of 34th Regiment R. I, at Midnapoor, Bengal. The problem is from an attentive investigation of the properties of the Magnetic Angle dividing a cube of the Universe. His work, when completed, corresponded precisely with the construction of that edifice as described in the book I Kings vi and vii.

1. The center of the power is the cosine of  $30^{\circ}$ .
2. The force is the chord of  $60^{\circ}$
3. The angle is  $45^{\circ}$ .
4. The field of operation is from  $45^{\circ}$  to  $90^{\circ}$ .
5. The apex of the beam above the angle of the roof is the completion of the angle, or Magnetic Point.

*Jehovah* in Hebrew is  $\text{J} 10, H 5, V 6, H 5 = 26$ . This is the magnetic measurement, and corresponds to a hair's breadth with the Biblical measure ; and  $2 \times 2 \times 2 = 8$ , is the cube, and plumb-line.

The Israelitish measurement was therefore a cube, and divided into 8 cubes, and the length of each divided into 40 cubits, or the four letters of the Name,  $\times 10$  (the first letter).

$$\text{J} 10, E 8, S 200, O 70, U 400, S 200 = 888.$$

The number of the Name of *Jesous* (the Name in Greek) is therefore 888, or 8, 8, 8, three cubes.

Mr. Tytler has further ascertained that this is the anatomy of the brain. When the brain is spread out it is the Temple. When the Temple is wrapped within the sphere, or formed into a globe, it is the brain, or Universe.

For further speculations upon this subject and its analogical bearings, we refer the reader to the works of Kenneth R. H. Mackenzie, whose pseudonym was "Cryptonymus," now deceased.

OPERA OF "ERMINIE." (Vol. V. p. 284.) This opera is founded upon Daumier's "L'Auberge des Adrets," known to the English stage as "Tobert Macaire." R.



*Geomantic Figure on Lord Beaconsfield.*

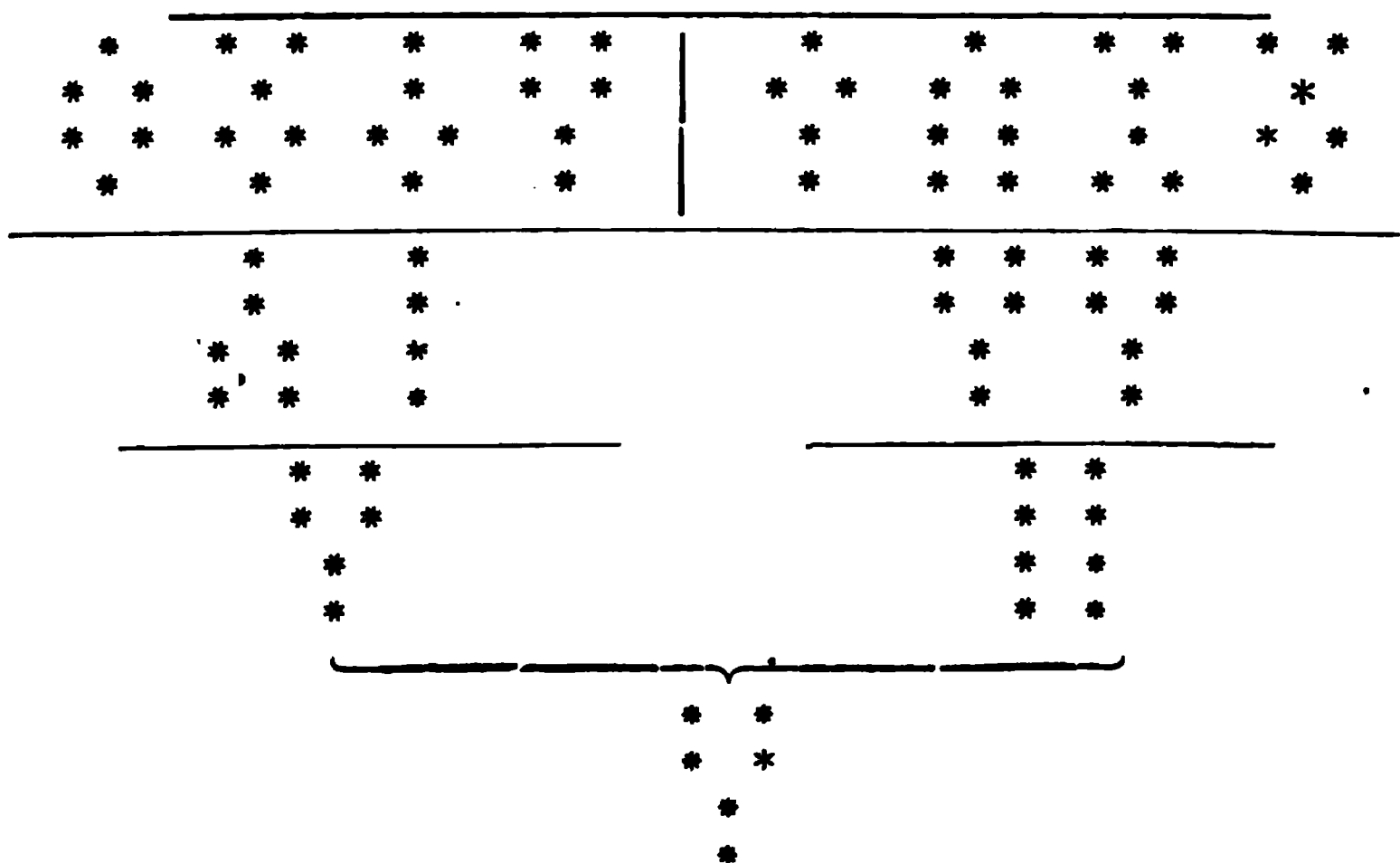
Edwards Pierrepont, in an article in the *North American Review* for December, 1888, on "Lord Beaconsfield and the Irish Question," takes the following geomantic figure and "judgment" from the biography of Bulwer-Lytton, by his son Lord Lytton—the present ambassador to France.

“ Throughout the greater part of Disraeli’s early career, his true character was very imperfectly perceived, and the real solidity of his intellect greatly underrated. My father’s early recognition of his rare gifts was never for a moment obscured by the ridicule with which mediocre men, for many years, were accustomed to speak of the political pretensions of the future Premier, as if he were merely a spouting charlatan. But neither did his opinion of the quality and order of his friend’s genius equal the public estimation of them at the close of that unique career which my father did not live to see.

What he did not see, however, he foresaw. His well-known interest in studies of an occult and mystical description, which will fill a chapter in the story of his later life, led him for many years to find amusement in the process of divination called 'geomancy.' And at Wildbad, in 1860, he cast and interpreted the subjoined Geomantic Figure of the character and career of Benjamin Disraeli :

**'GEOMANTIC FIGURE.**

### B. DISRAELI.



*Judex.*

A singularly fortunate figure. A strongly marked influence toward the acquisition of coveted objects.

He would gain largely by marriage in the pecuniary sense, which makes a crisis in his life. He would have a peaceful hearth, to his own taste, leaving him free for ambitious objects.

In honors, he has not only luck, but a felicity far beyond the most favorable prospects that could be reasonably anticipated from his past career, his present position, or his personal endowments.

He will leave a higher name than I should say his intellect quite warrants, or than would now be conjectured. He will certainly have *very high* honors. Whether official or in rank, high as compared with his birth or actual achievements.

He has a temperament that finds pleasure in what belongs to social life. He has not the reserve common to literary men.

He has considerable veneration, and will keep well with Church and State. Not merely from policy, but from sentiment and instinct.

His illnesses will be few and quick. But his last illness may be lingering. He is likely to live to old age—the close of his career much honored.

He will be, to the last, largely before the public. Much feared by his opponents, but greatly beloved, not only by those immediately about him, but by large numbers of persons to whom he is personally unknown. He will die, whether in or out of office, in an exceptionally high position, greatly lamented, and surrounded to the end by all the magnificent planetary influences of a propitious Jupiter.

No figure I have drawn more surprises me than this. It is so completely opposed to what I myself should have argued, not only from the rest of his career, but from my knowledge of the man.

He will bequeath a repute out of all proportion to the opinion now entertained of his intellect, even by those who think most highly of it.

Greater honors far than he has yet acquired are in store for him. His enemies, though active, are not persevering. His official friends, though not ardent, will yet minister to his success. E. L. B.

Though specious in theory, nothing can be falser in fact than the common saying that all the world is wiser than any man in it, if by this it be meant that the voice of the multitude is nearer the truth than the judgment of the sage. The popular estimate of eminent men is, in the majority of cases, the extravagant offspring of hearsay, which gathers force by repetition. When once the cry is taken up, the cuckoo-note, as it passes from mouth to mouth, assumes a sort of collective magnitude. Exaggeration is its necessary ailment. In the hasty correction of an erroneous belief, one extreme is succeeded by another, and perhaps we may rightly ascribe to this cause the fact

that my father's opinion was a mean between the earliest and latest popular estimate of his friend's character ; so that he, who asserted the genius of Disraeli when it was depreciated, was surprised at the glories revealed by this Geomantic Figure.

But whatever may be the truth in this particular, the singularity is the same—that the geomantic conclusions were not suggested by my father's views, but in glaring opposition to them.

The event, which verified his divination, contradicted his judgment."

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DEFINITIONS OF GOD. The following sublime definitions of God are found in the Hindû *Vedas* :

" He who surpasses speech, and through the power of whom speech is expressed, know, O thou ! that He is BRAHMA, and not these perishable things that man adores."

" He who cannot be comprehended by intelligence, and he alone, say the sages, through the power of whom the nature of intelligence can be understood, know, O thou ! that He is BRAHMA, and not these perishable things that man adores."

" He who cannot be seen by the organs of vision, and through the power of whom the organ of seeing sees, know, O thou ! that He is BRAHMA, and not these perishable things that man adores."

" He who cannot be heard by the organ of audition, and through the power of whom the organs hearing hears, know, O thou ! that He is BRAHMA, and not these perishable things that man adores."

" He who cannot be perceived by the organ of scent, and through the power of whom the organ of smelling smells, know, O thou ! that He is BRAHMA, and not these perishable things that man adores."

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JEWISH TITLES. (Vol: VI. p. 284.) John Kitto says (Cyclopædia Vol. II, p. 596) that there is no exact equivalent in the English language answering to the word Rabbi ; but in purport and usage it is near to *doctor* or *master* : or combining both these signification, would fairly represent it. The actual signification of *Rab* in Hebrew is " a great one," that is a chief, or master, and would as a title be probably represented by " *Excellenza* " of southern Europe, which is as common as Rabbi among the Jews. This title was employed in the Jewish schools in a three-fold form, indicating as many degrees but in a stricter sense than the academical degrees of Bachelor Master, and Doctor. The lowest of these degrees of honor was *Rab* Master ; *Rabbi*, Mo Master ; *Rabban*, Great Master and with the fix *Rabboni*, My Great Master" John xx, 16.)

**BABBAGE'S CALCULATING MACHINE.** (Vol. VI, p. 268.) The answer to this question can best be given in Babbage's own words taken from his "Ninth Bridgewater Treatise," pp. 43-48, Philadelphia edition, 1841. After giving a description of the calculating engine and his services to the English Government, and delays in its perfection, he says

"Let the figures thus seen be the series of natural numbers, 1, 2, 3, 4, 5, 6, &c., each of which exceeds its immediate antecedent by unity. Now, reader, let me ask how long you will have counted before you are firmly convinced that the engine, supposing its adjustments remain unaltered, will continue whilst its motion is maintained, to produce the same series of natural numbers? Some minds perhaps are so constituted, that after passing the first 100 terms, they will be satisfied that they are acquainted with the law. After seeing 500 terms, few will doubt; and after the 50,000th term, the propensity to believe that the succeeding term will be 50,001, will be almost irresistible. That term *will* be 50,001; the 5,000,000th and the 50,000,000th term will still appear in their expected order; and one unbroken chain of natural numbers will pass before your eyes, from 1 up to 100,000,000

True to the vast induction which has been made, the next succeeding term will be 100,0000,001; but after that the next number presented by the rim of the wheel, instead of being 100,000,002, is 100,010,002. The whole series from commencement being thus :

	1	
	2	
	3	
	4	
	* * *	
	* * * * *	
	99,999,999	
	100,000,000	
Regularly as far as	100,000,001	
	100,010,002	the law changes.
	100,030,003	
	100,060,004	
	100,100,005	
	100,150,006	
	100,210,007	
	100,280,008	
	100,360,009	
	100,450,010	
	100,550,100	
	* * * * *	

The law which *seemed* at first to govern this series at 100,000,002nd term failed. That term is larger than we expected by 10,000. The next term is larger than was anticipated by 30,000, and the excess of each term, above what we expected, forms the following table ;

10,000  
30,000  
60,000  
100,000  
150,000  
\* \* \* \* \*

being, in fact, the series of *triangular numbers*, each multiplied by 10,000. The numbers 1, 3, 6, 10, 15, 21, 28, &c., are formed by adding the successive terms of the series of natural numbers, thus :

$$\begin{aligned} 1 &= 1 \\ 1 + 2 &= 3 \\ 1 + 2 + 3 &= 6 \\ 1 + 2 + 3 + 4 &= 10, \text{ \&c.} \end{aligned}$$

They are called triangular numbers, because a number of points corresponding to any term can always be placed to form a triangle.

If we continue to observe, we shall discover another law then coming into action, which also is dependent, but in a different manner, on triangular numbers. This will continue through about 1430 terms, when a new law is again introduced, which extends over about 950 terms ; and this, too, like all its predecessors, fails, and gives place to other laws, which appear at different intervals.

Now it must be remarked, that the law that each number presented by the engine is greater by unity than the preceding number, which law the observer had deduced from an induction of 100,000,000 instances, was not the true law that regulated its action ; and that the occurrence of the number 100,010,002 at the 100,000,002d term, was as necessary a consequence of the original adjustment, and might have been as fully foreknown at the commencement, as was the regular succession of any one of the intermediate numbers to its immediate antecedent. The same remark applies to the next apparent deviation of the new law, which was founded on an induction of 2761 terms, and to all the succeeding laws ; with this limitation only, that whilst their consecutive introduction at various definite intervals is a necessary consequence of the mechanical structure of the engine, our knowledge of analysis does not yet enable us to predict the periods at which the more distant laws will be introduced. \* \*

The engine we have been considering is but a very small portion (about 15 figures) of a much larger one, which was preparing, and is partly executed ; it was intended, when completed, that it should have

presented at once to the eye about 130 figures. In that more extended form which recent simplifications have enabled me to give to machinery constructed for the purpose of making calculations, it will be possible, by certain adjustments, to set the engine so that it shall produce the series of natural numbers in regular order, from unity up to a number expressed by over 1,000 places of figures. At the end of that term, another and different law shall regulate the succeeding terms; this law shall continue in operation perhaps for a number of terms, expressed perhaps by unity, followed by 1,000 zeros, or  $10^{1000}$  ;\* at which period a third law shall be introduced, and like its predecessors, govern the figures produced by the engine during a third of those enormous periods. This change of laws might continue without limit. Each individual law being destined to govern for millions of ages the calculations of the engine, and then give way to its successor to pursue a like career.

It has been supposed that ten turns of the handle of the calculating engine might be made in a minute, or about 526,000,000 in a century. As in this case, each turn would make a calculation, after a million of centuries, and only the 15th place of figures would have then been reached."

[illegible]

We print this stupendous number so one can *see* what  $10^{1000}$  represents ; a number of 333 periods, and in Henkle's method of enumeration would be Ten Tertio-Trigillions-Trecentillions. This numbers has never yet been equaled in computations when composed of digits, and is not quite one-half longer than William Shanks's computation for the value of  $\pi$ . (See Vol. V, p. 120.)

## GEOMETRICAL CONSTRUCTION FOR THE CIRCUMFERENCE OF A CIRCLE

From any point  $A$ , in an indefinite straight line  $AC$ , draw a perpendicular  $AB$  equal to the given diameter. Then set off  $AC$  equal to three times  $AB$ . Join  $BC$ , and from  $D$ , a point in the line  $AC$ , equal to twice  $AB$ , draw the perpendicular  $DH$ . Make  $DM$  equal to  $HC$ , and  $AN$  equal to  $\frac{1}{8}$  of  $\frac{1}{10}$  of  $AB$ .

Then  $NM$  is nearly equal to the circumference of a circle, whose diameter is  $AB$ . Because,

By construction,  $AN = \frac{1}{8}$  of  $\frac{1}{10}$  of  $AB$

$$AD = 2AB$$

$$DM = HC = \frac{1}{8} \sqrt{AB^2 + AC^2} = \frac{1}{8} BC$$

If  $AB = 1$ ; then  $\frac{1}{8}$  of  $\frac{1}{10} + 2 + \frac{1}{8} \sqrt{10} = \pi = 3.141592+$ , correct to the sixth decimal place.

T. P. STOWELL.

CURIOUS PROPERTIES OF 2.61803399+ (Vol. V, p. 206.) I will add a few more curious properties to those already given of the number 2.61803399+

The reciprocal of .61803399+ is 1.61803399+

If a series of fractions be made thus,  $\frac{2}{1}$ ,  $\frac{3}{2}$ ,  $\frac{5}{3}$ ,  $\frac{8}{5}$ ,  $\frac{13}{8}$ ,  $\frac{21}{13}$ ,  $\frac{34}{21}$ , etc., in which every numerator equals the preceding denominator, and each denominator equals the sum of the preceding numerator and denominator, then the farther we proceed with the series the nearer the fractions become to equal .61803399+. They are alternately a little greater and a little less; but the difference grows less at each successive step.

The cosine of the angle that the sides of the Great Pyramid make with the plane of the base is .61803399+

T. S. BARRETT.

*Questions and Answers.*

—O—O—

TRANSLATION OF PROVERBS XXII, 6. (Vol. V. p. 78.) Is this

“ *Train up a child in the way he should go,*”or “ *Enoch hath been made into a boy, according to his path.*”

FIDES.

Proverbs xxii, 6, reads in Hebrew thus : HHaNoUcH L'NaGHaR  
GHaL PeeI DaRCHVou, GaM CHeeI IaZKeeIN LouA IoSVooR  
MeeMMeNoH. The literal meaning of which is :

“ Initiate a youth after the manner of his way, (then) also if he gets to be old he will not deviate from it.”

The proposed rendering is impossible ; because, (1st), the second part of the verse would not suit to it at all ; (2d), there is no verb in this passage to be rendered “ hath been made ” ; (3d), therefore, HHaNoUcH must be a verb, and not a noun ; and (4th), the L in the word L'NaGHaR does not mean always “ to,” “ into,” representing the dative case, but is frequently the sign letter for the accusative (=objective) case, and here is the objective case, NaGHaR, after the verb HHaNoUcH.

The reading of the English Common Version is insipid. Thousands of youths have been trained the way they should go, *i. e.* aright yet when they became old they left it. The author evidently inveighs against the ready-made, wholesale education of the schools, and he would rather have a youth educated according to *his individual capacity* into knowledge and wisdom, then he would not turn from them when he becomes older, and thinks for himself.

The HHaNVouCH (English “ Enoch ”) of Genesis v, 18, 19, 20, 21, 22, 23, and 24, was very likely an initiate into divine wisdom. His grandfather was M'HaLeL-AeL, = “ Praiser of God,” but his father was IeReD = “ a goer down,” “ an indifferent,” or “ apostate,” and the traditional divine wisdom threatened to become extinct with him. But HHaNVouCH, his son, became initiated, and begat his longest-lived son, whose name was MTHooVIHeLaHH, which I would render “ Marking-Sender,” *i. e.* one who disseminated certain marks and signs, and it may be he who taught Noah the science of geometry, without which he could not have built the ark. In that ark I have shown\* from Genesis vi, 16, how in it was involved the knowledge of the

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\* “ The Measures and Weights mentioned in the Bible, in connection with Structures, Worship and Narratives.”—*International Standard*, Vol. III, No. 2, pp. 101-100, 1885.



47th problem of Euclid ; and with this ( $a^2+b^2=c^2$ ) is connected a great deal of divine wisdom, since the out-measuring of the circle, the infinite, is only possible at all by the equilateral triangle, and this triangle only by its half, namely, the rectangular triangle. The divine constructive hypotenuse is manifest to the mind by two *unequal* lines, the first of which in numbers are  $3^2+4^2$ , which are the *unequal* parts of  $5^2$ .

E. M. EPSTEIN, M. D.



LARGEST NEWSPAPER EVER PRINTED IN THE UNITED STATES. (Vol. VI, p. 268.) The largest newspaper, to our knowledge, ever published in this country was *The Illuminated Quadruple Constellation*, a leviathan paper, filled with every variety of useful and entertaining reading for the million. New York, July 4, 1859. Edition 28,000. Price 50 cents a copy. George Roberts, publisher. The mastodon of newspapers, published once in 100 years. Size, 70 x 100 inches, or almost 49 square feet ; an 8-page sheet ; 104 columns, or 13 to each page ; length of column, 48 inches, or 4 feet ; illustrated with good portraits of President James Buchanan, Edward Everett, Henry Ward Beecher, Nathaniel P. Banks, Edwin H. Chapin, Horace Greeley, Elizabeth Barret Browning, Alexander Von Humbolt, James Gordon Bennett, and several others. The sheet contains 36 different poems entire, among them is "Braddock Defeat ; or the Battle of Monongahela" ; this poem contains 64 eight-line verses, and occupies one column and one-fourth, or 5 feet long. The paper also contains the celebrated "Moon Hoax" entire, taken from the *New York Sun*, 1835 ; historical articles, essays, stories, etc. The weight of the paper required for the edition of 28,000 was equal to that required for over 200,000 copies of the *New York Times* and *Herald*, and cost \$60 a ream, each ream weighing 300 pounds. It required 40 persons 8 weeks of labor to set up and publish the edition.

The longest *item* of news ever telegraphed to a newspaper, was the entire New Testament as revised, and all variations of the English and American committees, from New York to Chicago, and the whole published as an item of news in the Sunday morning *Chicago Tribune* for May 22, 1882. That day's *Tribune* comprised 20 pages, 16 of which were required for the New Testament.

**COLLISIONS OF PLANETS.** Dr. Olbers put forth the hypothesis that the asteroids were but the fragments of one large planet which by some catastrophe had been broken into planetoids. Has there ever been any calculations made as to the probabilities that a collision could take place?  
T. B. M.

Prof. O. M. Mitchel says, in his revision of Burret's "Geography of the Heavens," that if the knowledge of the asteroids was perfect, it would not be impossible to compute backward or forward and ascertain the time when the orbits of any pair of planets intersected each other, and where the planets were at the time of this intersection. Could the intervals between the times of intersection be obtained, and combining these with the periods of the asteroids in their orbits, it would become possible to compute the time when a collision of the planets is to take place. By computations, Encke found that about the year A. D. 3397, the orbit of Ceres would actually cut the orbit of Pallas; but to obtain the position of the planets in their orbits, at the time of intersection, has not been attempted. The hypothesis of Dr. Olbers, from every new asteroid discovered, although the fact that the aphelion of Flora is shorter than the perihelion of Ceres, presents a difficulty which had not before existed.

Up to the time that Prof. Mitchel published these statements, 1849, only 8 of the asteroids had been discovered. At that time the asteroids known were Ceres, Pallas, Juno, Vesta, Astæra, Hebe, Iris, and Flora. The following interior orbits were demonstrated, there being then 10 cases where the orbit is enclosed the one within another:

Flora is within Hebe.

Flora and Iris are within Juno.

Astæra and Vesta are within Pallas.

Astæra, Elora, Iris, Pallas, and Vesta are within Ceres.

The following asteroids' orbits interlock like the links of a chain:

Pallas and Vesta interlock into Flora.

Ceres, Pallas, and Vesta interlock into Hebe.

Flora, Hebe, Pallas, and Vesta interlock into Iris.

Ceres, Hebe, Pallas, and Vesta interlock into Juno.

Flora, Hebe, Iris, Juno, and Vesta interlock into Astæra.

Now, since 1849, to January 1, 1888, 272 more asteroids have been discovered, or a total of 280 (see Vol. V, pp. 8-13, 206). There must be an intricate number of interlockings of their orbits, and a great probability that sooner or later a collision will occur among them.

THE PHOENIX. ITS AGE. (Vol. VI, p. 284.) For the benefit of "MYSTIC" we give a further account of this bird as found in McClintock & Strong's "Cyclopædia," Vol. VIII, p. 164. The precise period of the visit of the phoenix was not known at Heliopolis, in Egypt, and was a subject of contention till its appearance. The connection of the phoenix period with that of the Sothiac cycle, appears to be generally received by chronologists. According to Ælian it was a cycle of 500 years; Tacitus seems to make it 250 years; Lepsius makes it 1,500 years. The phoenix is said to have appeared in Egypt 4 times: 1st, under Sesostris; 2d, under Amasis, B. C. 569-525; 3d, under Ptolemy Philadelphus, B. C. 284-246; 4th, just prior to the death of Tiberius, B. C. 36-34. The bird appears upon the coins of Constantine, A. D. 334, or 300 after the death of Jesus, who was considered the phoenix by the monastic writers. The Rabbins claim that the phoenix is twice spoken of in the Scriptures, namely, "I shall die in my nest, I shall multiply *my* days as the sand" (Job XXIX, 18); and, second, "thy youth is renewed like the eagle's" (Ps. III, 5).

The Simorg of the Persians is said to have witnessed 12 catastrophes, and may yet see many more. It has built its nest on Mount Kaf, and perched upon the branches of the Yogard, or tree of life; and it foretells good or evil to mortals. The Jews have their sacred bird, the Tsits; the Arabians, the Rokh; and the Hindûs, Semenda.

BANBURY CROSS. (Vol. V, pp. 180, 206.) Your correspondent is somewhat in error in his reply to this question. The cross was in the market place of the village, and around it the markets were held. In olden times the shows of Robin Hood and Maid Marian were held in the village, but in the reign of Elizabeth, the Puritans, thinking these pageants savored of idolatry, attacked these maskers and mummers, and in the riot that ensued, the high cross, with three smaller ones, was cut down and hacked into pieces. It has of late years been rebuilt. The old nursery rhyme, "Ride a cock-horse to Banbury Cross," is only a verified chronicle of the old history of the village. R.

STENTORIAN VOICE. (Vol. VI, p. 268.) The loudest-voiced man of whom we have a record, is sung by Homer, *Iliad* Bk. v, l. 786-769:

"Heaven's empress mingles with the immortal crowd,  
And shouts, in Stentor's sounding voice, aloud;  
Stentor the strong, endued with brazen lungs,  
Whose throat surpassed the force of fifty tongues."

BALLAD OF "WILD DARRELL." (Vol. V, p. 180.) This ballad is  
by Sir Walter Scott, and is introduced into "Rokeby." R.

BALLAD OF "WILD DARRELL.

O—O—O—O

" And whither would you lead me, then ? "  
Quoth the Friar of orders grey;  
And the Ruffians twain replied again,  
" By a dying woman to pray."—

" I see," he said, " a lovely sight,  
A sight bodes little harm,  
A lady as a lily bright,  
With an infant in her arms."

" Then do thine office, Friar grey,  
And see thou shrive her free !  
Else shall the sprite, that parts to night,  
Fling all its guilt on thee.

" Let mass be said, and trentals read,  
When thou'rt to convent gone,  
And bid the bell of St. Benedict  
Toll out its doapest tone."

The shift is done, the Friar is gone,  
Blindfolded as he came—  
Next morning, all in Littlecot Hall  
Were weeping for their dame.

Wild Darrell is an alter'd man,  
The village crones can tell;  
He looks pale as day, and strives to pray,  
If he hears the convent bell.

If prince or peer cross Darrell's way,  
He'll beard him in his pried—  
If he meet a Friar of orders grey,  
He droops and turns aside.

—*Rokeby*, Canto V, xxvii.

—O—O—O—

CHESS-KNIGHT'S TOUR. (Vol. VI, p. 267.) The following is the  
solution to LEANDER L. THORNE'S tour.

" Hail Morphy, bloodless victor, hail,  
Thou mightier than Napoleon;  
His triumphs were the price of blood,  
His wars by many generals won,  
While thou upon the checquered board,  
With never erring certainty,  
Alone, unaided ledest on  
Thy troops to glorious victory."

PROBLEM. (Vol. VI, p. 236. No 3.) No solution has been received  
to this problem. We publish the answer, and still await a solution.

How far did the lost spirits fall in nine days, as stated in Milton's  
"Paradise Lost" ? JONAS.

" Nine days they fell."—*Bk. vi, line 861.*

" Thence, full of anguish driven,  
The space of seven continued nights he rode  
With darkness, thrice the equinoctial line  
He circled, four times crossed the car of night  
From pole to pole, traversing each colure ;  
On the eighth returned, and on the coast, averse,  
From entrance or cherubic watch, by stealth  
Found unsuspected sway."—*Bk. XI, lines 62-69.*

*Ans.* 1,832,308,363 miles, 1120 yards.

## QUESTIONS.



1. In the London *Athenæum* of December 25, 1869, is a notice of Caxton's "Fifteen O's, or Prayers beginning with O." Will some one tell us what these prayers are, and send them for publication in N. & Q.?

THOS. C. BOLTWOOD.

2. What are the names of Jupiter's four satellites? \* \* \* \*

3. Have the Jews ever accepted of any Messiah, and if so, who was he, and when?

CHRISTIAN.

4. What was the oath of Pythagoras, and where can it be found?

J. O. E.

5. Where can the Pope's curse be found, used in the excommunication of a person from the Holy Catholic Church?

J. O. E.

6. From what is the word *Pyramid* derived?

LOGOS.

7. The "three bad kappas," we are told by classical writers, were "Cappadocia, Cilicia, and Crete." Why is the second now pronounced *Silisia*?

LOGOS.

8. Who is the first Saviour mentioned in the Bible as such, and where?

LOGOS.

9. How many ways of voting are there in the present existing secret societies of the day, and what are they?

NOVITIATE.

10. Who is the real ancient author of the exclamation "*Eureka!*" (I have found it!), and with what discovery was it ejaculated? The correct answer will settle a dispute.

L.

11. Did Gautama the Buddha leave any one commandment containing his doctrines summed up? We are told that Confucius formulated his doctrines into the Golden Rule; and that Jesus the Christ summed the law and the prophets up into two commandments. (See Matt. xxii, 37; Mark xii, 30; Luke x, 27.)

CATECHUMEN.

12. Does there exist at the present time any traces near the coast of Norway of what is recorded as a *maelstrom*?

HANNAH.

12. The followers of Gautama Buddha are called *Buddhagama*, that is, "approaching or coming to enlightenment." The missionaries in the East write the word *Christianiagama* for Christianity. Are the Christians *Christiagama*? Their word for "religion" is *bandhana*; therefore, would the Christian religion be *Christianibandhana*?

ELFIN FOSTER

13. What was the name by which America was first known? W.

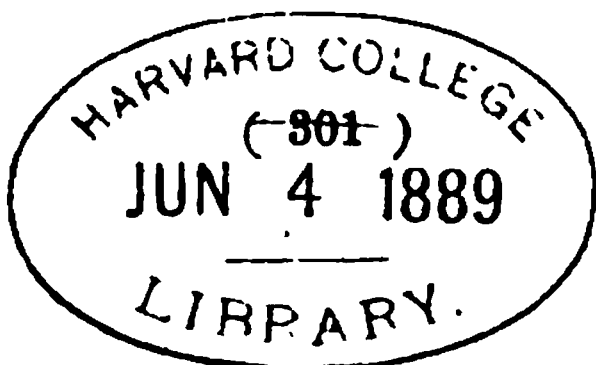












MISCELLANEOUS

NOTES AND QUERIES,

WITH ANSWERS.

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*"Thou seed of a Divine Mind art sprung from Hercules."*—EURIPIDES.

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*American College Cheers.*

The following collection of college cheers was made by *The World Almanac*, through correspondence with officials of the respective institutions.

ALLEGHANY. Alleghe! Alleghe! 'rah! boom! Alleghany!

AMHERST. 'Rah; 'rah-'rah; 'Rah; 'rah-'rah; Am-h-e-r-s-t!

BATES B-a-t-e-s! 'rah! 'rah! 'rah! Boom-a-la-ka! boom-a-la-ka!  
boom! Bates! boom!

BOWDOIN. B-o-w-d-o-i-n! 'rah! 'rah! 'rah!

BROOKLYN, POLYTECHNIC. 'Rah! 'rah! 'rah! P-o-l-y! Tiger!

BROWN. 'Rah, 'rah! 'rah, 'rah! 'rah, 'rah!

CALIFORNIA, UNIVERSITY OF. Ha! ha! ha! Californi-a! V. C.  
Berkley! Zip! Boom! ah!

COLBY. C-o-l-b-y, 'rah! 'rah! 'rah!

COLUMBIA. H'ray! h'ray! h'ray! C-o-l-u-m-b-i-a!

CORNELL. Cornell! I yell, yell, yell, Cornell!

DARTMOUTH. Wah, who, wah! wah, who, wah! do, didi, Dart-  
mouth! Wah, who, wah!

DICKINSON. Rip! 'rah! bus! bis! Dickinsoniensis!

GEORGETOWN, D. C. Georgetown, 'rah! Georgetown, 'rah! George-  
town, tiger, sis, boom, ah!

HAMILTON. 'Rah! 'rah 'rah! Ham-il-ton! Zip, 'rah, boom!

HARVARD. 'Rah, 'rah, 'rah! 'rah, 'rah, 'rah! 'rah, 'rah, 'rah! Har-  
vard!

HOBART. Hip, Ho-bart! hip, Ho-bart! hip, Ho! hip, Ho! Ho-  
bart!

INDIANA UNIVERSITY. I-U! I-U! I-U! 'rah, 'rah, 'rah! saith  
boom, bang!

IOWA, UNIVERSITY OF. S. U. I! S. U. I. giddy, giddy, uni! S. U. I!  
 KANSAS, UNIVERSITY OF. Roch, chalk! Jay, hawk! K. U.  
 KENYON. 'Rah! 'rah! 'rah! K-e-n-y-o-n! Kenyon!  
 LAFAYETTE. 'Rah, 'rah, 'rah! Tiger! La-fay-ette!  
 LEHIGH UNIVERSITY. Hoo rah, h'ray! hoo-rah, h'ray! h'ray,  
 h'ray, h'ray! Lehigh!  
 MIDDLEBURY. Midd', Midd', Middlebury! 'Rah, 'rah, 'rah!  
 MINNESOTA, UNIVERSITY OF. 'Rah! 'rah! 'rah! Ask-your-mah!  
 Minne-so-ta!  
 MT. ST. MARY'S. 'Rah! 'rah! 'rah! M-t-St-M-a-r-y-s!  
 NEW YORK, COLLEGE OF THE CITY OF. 'Rah, 'rah, 'rah!  
 C. C. N. Y. !  
 NEW YORK, UNIVERSITY OF THE CITY OF. 'Rah, 'rah, 'rah!  
 N. Y U. ! sis! boom! ah-h-h!  
 NOTRE DAME. 'Rah, 'rah, 'rah! U-N-D! U-N-D!  
 PENNSYLVANIA, UNIVERSITY OF. Hoo-rah! Hoo-rah! Hoo-rah!  
 Penn-syl-va-ni a!  
 PRINCETON. Hurrah! Hurrah! Hurrah! Tiger-sis-s-s! boom! ah!  
 ROCHESTER, UNIVERSITY OF. Hoi! hoi! hoi: 'rah! 'rah! 'rah!  
 Rochester!  
 RUTGERS. 'Rah! 'rah! 'rah! bow-wow-wow! Rutgers!  
 STEVENS INSTITUTE. Boom-rah! Boom-rah! Boom-rah! Stevens!  
 ST. JOHN'S. S-J! S-J! hip, hip, hooray, hooray!  
 SWARTHMORE. 'Rah, 'rah, 'rah! 'rah, 'rah, 'rah! Swarthmore,  
 Swarthmore! hoo-ray!  
 TENNESSEE, UNIVERSITY OF. 'Rah, 'rah! bim-boom-bee! 'rah, 'rah!  
 Tennessee!  
 TRINITY. 'Rah! 'rah! 'rah! Trinity! Boom-'rah! boom-'rah!  
 Trin-i-ty!  
 TUFTS. 'Rah, 'rah, 'rah! 'rah, 'rah, 'rah! Tufts!  
 UNION. 'Rah, 'rah, 'rah! U-n-i-o-n? hikah, hikah, hikah!  
 VERMONT, UNIVERSITY OF. 'Rah, 'rah, 'rah! 'rah, 'rah, 'rah!  
 U.-V.-M. ! 'rah, 'rah!  
 VIRGINIA, UNIVERSITY OF. 'Rah, 'rah, 'rah! U-ni-V! 'rah, 'rah, 'rah!  
 Var-si-ty! Vir-gin-ia!  
 WASHINGTON AND LEE. Chich-a-go-runk! go-runk! go-runk!  
 ha, ho, hi, ho! Wash-ing-ton and Lee!  
 WESLEYAN, UNIVERSITY. 'Rah, 'rah! 'rah, 'rah! Wes-lei-an-a!  
 'rah, 'rah! 'rah, 'rah!  
 WILLIAMS. 'Rah, 'rah, 'rah! Will-yums! yams, ! yums! Will-  
 yums!  
 WISCONSIN, UNIVERSITY OF. U! 'rah, 'rah, 'rah! Wis-con-sin!  
 WOOSTER, UNIVERSITY OF. 'Rah, 'rah, 'rah! W-two O-ster!  
 bang! boom! whiz!  
 YALE. 'Rah, 'rah, 'rah! 'rah, 'rah, 'rah! 'rah, 'rah, 'rah! Yale!

## QUESTIONS AND ANSWERS.

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**THE SENTENCE OF JESUS.** (Vol. VI, p. 226.) Rabbi Solomon Schindler, of Boston, has the following communication in the Boston *Herald* of November 17, 1888, in reply to "the Sentence of Jesus," published in the same paper, November 9 :

"I shall at present not deny the statement of your correspondent that a plate dating back to the 12th century, and containing what purports to be the death sentence of Jesus, has been discovered in some library, but even from the translation which your correspondent publishes, it can be seen that the document is a forgery, one of those pious frauds which so frequently occurred during the dark ages. I wish therefore to point out to my orthodox Christian friends who may have read the article in the *Herald*, some passages in the translation which will prove that the document (if it indeed exists), is a forgery, and a very clever one besides.

1. Pilate would never have called Jerusalem "the most holy city of Jerusalem," especially not in an official document. This passage alone betrays the hand of some Christian forger.

2. The grounds upon which he passed the sentence would have been ridiculous in the eyes of any Roman. They are in fact copied from the gospel, which he must have anticipated. If Jesus was crucified at all, Pilate removed him without trial or sentence, on the suspicion that he might create a revolt on the Passover festival. In times of war the Romans were known to set aside all laws.

3. It must have been purely accidental that Jesus was executed in common with two robbers. Whether they were Jews or Gentiles, even, the gospels do not tell. The pious forger of the 12th century, however, carries this accident into the death sentence, making Pilate decree what was a pure coincidence. Now, according to the gospel narrative, the whole transaction, trial and all, passed off in less time than it could be duplicated. How could Pilate have strengthened his sentence in such a manner as to order that he should be crucified between two robbers? Were there commonly robbers at his disposal to be executed at so short a notice? Did he ever make use of them as a means of thus still more humiliating an offender?

4. The most laughable part of the forgery are the signatures attached to the document. The first witness signed himself as Daniel Robani, pharisee. It takes all the Christian ignorance of the 12th century both to fabricate and swallow such a signature. The word pharisee was no official title that any person could or would assume; it was a nickname, which nobody ever thought of placing behind his name, as little as any witness, to some legal document, today, would

subscribe his name as John Jones, mugwump, or John Jones, copper-head, or John Jones, know-nothing.

5. To top the climax, it is said that the document appears to have been written in Hebrew, while it is well known that the Romans made use, in all their official dealings, only of the Latin tongue. If, however, Pilate, in this instance, should have made use of the Hebrew idiom, he would also have made use of the Hebrew date, and not have dated the document, as the translation gives it, in Roman fashion.

*Sapienti sat.* The plate may be worth to Lord Howard £ 2,890 as an antiquity which does prove how pious Christians in the 12th century endeavored to prop up their unhistorical, and, therefore, untenable Christian myths of all kinds of devices. As a piece of evidence wherewith to prove the truth and exactness of the gospel stories, such a plate is worthless, even if it should exist."

SOLOMON SCHINDLER, Rabbi Temple Adath Israel.

ELIOT'S INDIAN BIBLE. (Vol. VI, p. 240.) The story quoted in NOTES AND QUERIES for February, 1889, about Eliot's mistake in translating "cried through the lattice," so that the Indians read that she cried through an eel-pot, was long ago exploded by Dr. J. Hammond Trumbull of Hartford, Conn., who in a paper published with the Transactions of the American Philological Association, 1872, says of this story : " There are only two exceptions to be taken to it." (The first is of no present consequence.) The second : " That in the verse in question Eliot *did not translate the word 'lattice' at all* ; but transferred it from the English to the Indian text, adding only the locative suffix, '*papâshpe lattice-at,*' through the lattice."

F. J. PARKER, Boston, Mass.

THE PLANETARY DAYS OF THE WEEK. What are the so-called " Planetary days of the week " ?

ANDREW.

The planetary days of the week are the *names* of the days which would have followed by mythology and etymology to make the week complete ; they might be placed thus for comparison, and completion :

Sunday,	Sun's day,	Sun.	Sunday,	<i>Dies Solis.</i>
Monday,	Moon's day,	Moon.	Monday,	" <i>Lunæ.</i>
Tuesday,	Tuisco's day,	War.	Marsday,	" <i>Martis.</i>
Wednesday,	Woden's day,	Odin.	Mercurisday,	" <i>Mecurii.</i>
Thursday,	Thor's day,	Thunder.	Jovsday,	" <i>Jovis.</i>
Friday,	Friga's day,	Love.	Vensday,	" <i>Veneris.</i>
Saturday,	Saturn's day,	Saturn.	Saturday,	" <i>Saturni.</i>

THE JEWS' MESSIAH. (Vol. VI, p. 300.) Rabbi Solomon Schindler, of Boston, in his work on "Messianic Expectations, and Modern Judaism," has a chapter (v) on *A Genuine Messiah*. He says that Bar Kochba, or Bar Kosiba, which name he derived from the small town of Kosiba, or Kesib, was the embodiment of all the qualities expected to appertain to a Messiah ; that Rabbi Akibi, the acknowledged head of the Jewish community at the advent of Bar Kochba, pointed him out as the long expected one and played a principal part in the Bar Kochbean war ; that Bar Kochba died a hero and a patriot for the Jews about the year 133 ; that the writer of Mark witnessed the Bar Kochbean revolt, and put the graphic picture of it into the mouth of Jesus as a prophecy. Akiba suffered martyrdom at the hands of the Romans, being flayed alive, his last words being, "Hear, O Israel : the Lord our God is *one* Lord." (Deut. vi, 4). The revolt of Bar Kochba is no myth, although no poet has sung his praise. A legend says, that when a man brought the head of Bar Kochba to Severus, and claimed that he had slain him, the latter said "If this man had not been killed by God himself, the power of a mortal could never have harmed him." Another legend says that his body, when found, was encircled by a snake, which would allow nobody to harm it.

According to McClintock & Strong's Cyclopædia, the name Bar Kochba is Chaldean, and means "son of the star," and he applied to himself the prophecy, "There shall come a Star out of Jacob, and a Sceptre shall rise out of Israel (Num. xxiv, 17). He issued coins having on one side his own name, and on the other "Freedom of Jerusalem." The new city was *Ælia Capitolina*, founded on the site of Jerusalem.

"A KING CAN KILL, A KING CAN SAVE." Who is the author of, and where is this line found ? H. B. S.

The line is a slight change from the words of a poem in a dialogue by John Gower. It occurs in "Confessio Amantis," Book vii, the subject being : "Of the three, Wine, Women, and the King, which is the strongest ?" Harpages says :

"A kyng may spille, a kyng may saue,  
A kyng may make a lord a knave,  
And a knave a lord also ;  
The power of a kyng stont so ;  
That he the lawes ouerpasseth ;  
What he will make lesse, he lesseth,  
What he will make more, he moreth."

A CENTURY OF INVENTIONS. (Vol. VI, p. 284.) This is the name of a book containing an account of 100 inventions, by the Marquis of Worcester, first printed in 1663. Henry Dircks published the "Life, Times, and Scientific Labors of the Second Marquis of Worcester," and reprinted the "Century of Inventions," London, 1665. The title-page of the latter is as follows :

"A Century of the Names and Scantlings of such Inventions, as at present I can call to mind to have tried and perfected, which (my former notes being lost) I have, at the instance of a powerful Friend, endeavored now in the Year 1655, to set these down in such a way as may sufficiently instruct me to put any of them in practice. *Artis & Naturæ proles*. London: Printed by J. Grismond in the year 1663."

The following is a synoysis of the 100 inventions as given in the English *Penny Cyclopædia* :

- |   |   |
|---|---|
| 1. Seals abundantly significantly.                | 23. An ebbing and flowing castle clock. |
| 2. Private and particular to each owner.          | 24. Strength increasing spring.         |
| 3. One-line cipher.                               | 25. Double-drawing engine for weights.  |
| 4. Reduced to a point.                            | 26. To and fro lever.                   |
| 5. Varied significantly to all of the 24 letters. | 27. Most easy level draught.            |
| 6. Minute and perfect discourse by colors.        | 28. Portable bridge.                    |
| 7. To hold the same by night.                     | 29. Movable fortification.              |
| 8. To level cannons by night.                     | 30. Rising bulkwark.                    |
| 9. Ship-destroying engine.                        | 31. An approaching blind.               |
| 10. How to fasten from aloof, and under water.    | 32. Universal character.                |
| 11. How to prevent both.                          | 33. Needle                              |
| 12. An unsinkable ship.                           | 34. Knotted string                      |
| 13. False-destroying decks.                       | 35. Fringe                              |
| 14. Multiplied strength in little rooms.          | 36. Bracelet                            |
| 15. Boat driven against wind and tide.            | 37. Pink glove                          |
| 16. Sea-sailing fort.                             | 38. Sieve                               |
| 17. Pleasant floating garden.                     | 39. Lanthorn                            |
| 18. An hour-glass fountain.                       | 40. } Alphabet by the { smell,          |
| 19. Coach-saving engine.                          | 41. } { taste,                          |
| 20. Balance water-wheel.                          | 42. } { touch,                          |
| 21. Bucket-fountain.                              | 43. Variations, all or each of these.   |
| 22. An ebbing and flowing river.                  | 44. Key pistol.                         |
|   | 45. Most conceited tinder-box.          |
|   | 46. An artificial bird.                 |
|   | 47. An hour water-ball.                 |
|   | 48. Screwed ascent of stairs.           |

- |   |  |
|---|--|
| 49. Tobacco tongs-engine.                     | 75. Discourse woven into tape or ribbon. |
| 50. Pocker ladder.                            | 76. To write in the dark.                |
| 51. Rule of gradation.                        | 77. Flying man.                          |
| 52. Mystical jangling of bells.               | 78. Continually going watch.             |
| 53. Hollowing of water-screw.                 | 79. Total locking of cabinet boxes.      |
| 54. Transparent water-screw.                  | 80. Light pistol barrels.                |
| 55. Double water-screw.                       | 81. Combe-conveyance for letters.        |
| 56. An advantageous change of centers.        | 82. Knife, spoon, or fork conveyance.    |
| 57. Constant water-flowing and ebbing motion. | 83. Rasping mill.                        |
| 58. An often-discharged pistol.               | 84. An arithmetical instrument.          |
| 59. An especial way for carabines.            | 85. An untoothsome pear.                 |
| 60. Flask charger.                            | 86. An imprisoning chair.                |
| 61. Way for musquets.                         | 87. Candle mould.                        |
| 62. Way for a harquebuss.                     | 88. Brazen head or a speaking figure.    |
| 63. For sakers and minyons.                   | 89. Primeo gloves.                       |
| 64. For the biggist cannon.                   | 90. Dicing-box.                          |
| 65. For a whole side of ship musquets.        | 91. An artificial ring-horse.            |
| 66. For guarding several avenues to a town.   | 92. Gravel engine.                       |
| 67. For musquetoons on horse-back.            | 93. Ship-raising enging.                 |
| 68. Fire water-works.                         | 94. Pocket engine to open any door.      |
| 69. Triangle key.                             | 95. Double cross-bow.                    |
| 70. Rose key.                                 | 96. Way for sea-banks.                   |
| 71. Square key, with a turning screw.         | 97. Perspective instrument.              |
| 72. An escutcheon for all locks.              | 98. Semi-omnipotent engine.              |
| 73. Transmittable gallery.                    | 99. Most admirable way to raise weights. |
| 74. Conceited door.                           | 100. Stupendous water-works.             |

He declares these to be "*in bonum publicum, et ad majorem Dei gloriam.*"

"Besydes many omitted, and some of three sorts willingly not set downe, as not fitt to be divulged, least ill use may be made thereof; butt to show that such things are also within my knowledge, I will here in myne own cypher set down one of each, not to be concealed when duty and affection obligeth me."

The Marquis describes each of these inventions ingeniously, and says of the 98th especially :

"And therefore I call this *A semi-omnipotent Engine*, and do intend that a model thereof be buried with me."



"EUREKA" — ARCHIMEDES OR PYTHAGORAS. (Vol. VI, p. 300.)  
 Anthon, in his "Classical Dictionary," article on *Archimedes*, p. 179, says, in reference to this ancient mathematician :

"His knowledge of the doctrines of specific gravities is proved by the well known story of his discovery of the mixture of silver with gold in King Hiero's crown, which fraud he detected by comparing the quantity of water displaced by equal weights of gold and silver. The thought occurred to him while in the bath, on observing that he displaced a bulk of water equal to his own body ; when, at once, perceiving a train of consequences, he ran naked out of the bath into the street, exclaiming *Eureka!* ("I have found it!"). This part of the story, however, is regarded by some as a mere exaggeration."

Anthon says Archimedes was a native of Syracuse, in Sicily, and flourished about 250 B. C. Under what masters he studied, or how much of his extraordinary knowledge he acquired from his predecessors, is not known. That he travelled into Egypt appears certain; but it is probable that, with his scientific acquaintance with that country he communicated more than he received.

The text-books for instruction in Ancient Craft Masonry contains nine classes of emblems in the Master mason's degree — the sixth of which is the "Forty-seventh Problem of Euclid." We copy from the "Trestle-Board," by Charles W. Moore (Boston, 1861), p. 43, the section relating to this problem :

"This was an invention of our ancient friend and brother, the Great Pythagoras, who, in his travels through Asia, Africa, and Europe, was initiated into several orders of priesthood, and is said to have been raised to the sublime degree of a Master Mason. This wise philosopher enriched his mind abundantly in a general knowledge of things, more especially in Geometry, or Masonry. On this subject he drew out many problems and theorems ; and among the most distinguished he erected this, when in the joy of his heart, he exclaimed *Eureka!* signifying in the Grecian language, "I have found it!" and upon the discovery of which he is said to have sacrificed a hecatomb. It teaches Masons to be general lovers of the arts and sciences."

This record is substantiated, in regard to the invention of the theorem, and problem, by Anthon (article *Pythagoras*, p. 1157), but not in the exclamation of *Eureka!*

Pythagoras lived, according to the best chronologists, between the years 608 B. C. and 466 B. C. ; Visconti agreed with Eusebius in fixing the date of his death at 496 B. C. This antedates the time

of Archimedes by 246 years. Pythagoras died at a very advanced age, it is said, and Archimedes was slain at the age of 75 years.

Now on what authority does either Charles Anthon or Charles W. Moore make the statement as to the person who exclaimed *Eureka* !

HOW a SPIDER SPINS A THREAD. (Vol. VI, p. 252.) This is a very interesting process, and like many other arts of the "lower orders" of beings, displays intelligence that the word "instinct" will not cover. The spiders that spin these webs have light slim bodies and long legs. They get on some elevated point and raise the body till the spot where the web is spun out is the highest part of the insect, and then the web is thrown to the breeze and floats away. After a little time the spider turns and pulls on the web with its claws, and if he finds by the pulling that the web has not attached itself to something, he spins out some more, and so continues until he finds the web is made fast at the other end. Then the spider crosses on it, and sometimes journeys from tree to tree in the same way, or the spider constructs a net to catch flies where he remains. I have watched this process many times, and also another, to explain which I will say that the web of the spider is in a fluid state until it comes to the air, and it comes from the body not all in one stream, but through hundreds of minute openings, and the insect can control the outlets so that the streams will twist into one, or remain separate and form a fiat mass so fine that it looks like mist. This is often seen where a spider catches a large insect in his net and winds it up to stop its struggles. Now when a spider wants to take a journey in the air, where there is no distant object to anchor to, he attaches his web to some projecting point, and lets himself down a few inches, and then works all the time spinning without twisting. He repeats this till the mass is sufficient to float in the air and bear up his own weight. he then mounts his raft and sails away.

O. H. L., Manchester, N. H.

"COMPLETING THE SQUARE." (Vol. VI, p. 243.) I have a copy of the 4th edition of Ryan's Algebra, dated 1843, on pp. 246-7 of which is given the rule for "completing the square." I also have a copy of Ryan's Algebra, dated 1824, which appears to be the 1st edition, on p. 395 of which is given the rule for "completing the square." Hence it seems that Robinson was not very familiar with the contents of Ryan's Algebra.

ARTEMAS MARTIN, Washington, D. C.

DERIVATION OF THE WORD PYRAMID. (Vol. VI, p. 300.) Volney says, according to Joseph T. Goodsir (Ethnic Inspiration, p. 265) that the word "Pyramid" is from an Egyptian word *Pooramis*, signifying "a cave."

Bunsen says (Egypt's Place, Vol. I p. 474 ; Vol. IV, p. 107) that it is from *Pyr*, "division," and *Met*, "ten." This is favored by C. Piazzzi Smyth (Life and Works, Vol. III, p. 121.)

John Taylor says (The Great Pyramid, Why was it Built, p. 191) that there is reason to suppose the name *Pyramis* may have had reference to *pyrós*, "wheat," and that the pyramid coffer in the Great Pyramid was a "measure of capacity of wheat," and that the structure itself may have been called a "wheat measure."

Hargraves Jennings says (Rosicrucians, 1870, p. 215) that the word is from *Pyr*, "fire" (division produced by fire), and *Metron*, "ten" (measures or spaces numbered as ten). The whole word means, and the monument bearing this name means, "the original Ten Measures or part of the Fiery Ecliptic or Solar Wheel, or the Ten Original Signs of the Zodiac. Therefore the pyramids are commemorative altars raised to the divinity Fire."

Sir Gardner Wilkinson says (Rawlinson's Herodotus) that the word is from *Pyrōn*, "a cake of pointed figure." Kenrick also agrees with this derivation.

Rev. G. Trevor says that the word is from *perami*, "lofty," and thought to be the same with the Hebrew *Charaboth*, which in Job III, 14, signifies a "sepulchre," though rendered in King James's version "desolate places."

Wilkins says (Dessertation on the Coptic Language) that pyramid is from *pouro*, "a kind," and *misi*, "a race, or generation," in the Coptic language.

"MANY A SLIP BETWIXT THE CUP AND THE LIP." Whence the origin of the proverb ? XENOS.

We are told by Eustathius that there was an ancient king Ancæus of Samos, who paid particular attention to the cultivation of the vine. On one occasion he was told by a slave, whom he was pressing with hard labor in his vineyard, that he would never taste of its product. After the vintage had been gathered in and the wine made, Ancæus, in order to falsify the prediction, was about to raise a cup of liquor to his lips, deriding, at the same time, the pretended prophet (who, how-

ever, merely told him, in reply, that there were many things between the cup and the lip), when tidings came that a bore had broken into the vineyard. Throwing down the cup with the untasted liquor, An-cæus rushed forth to meet the animal, and lost his life in the encounter. Hence arose the proverb,

*Multa cadunt inter calicem supremaque labra.*

“Many things fall between the edge of cup and the lips.”

The story given here, we are aware is related differently by other writers, but the point in all is the same.

QUOTATION FROM VIRGIL. (Vol. VI, p. 268.) This quotation,

“Macte nova virtute puer; sic itur ad astra;  
Dilecte genite, et geniture, Deos.”

is found in Virgil's *Æneid*, (Book IX, lines 641-642). It was addressed by Apollo to Ascanius, called Iulus (often “little Iulus”), the son of Æneas and Creüsa; Æneas was son of Anchises and Venus; (Creüsa was daughter of Priam and Hecuba.) Hence Apollo's words:

“Go on spotless boy, in the paths of virtue; it is the way to the stars; offspring of the gods thyself; so shalt thou become the father of gods.”

“Go on, *hopeful* boy, improve in virtue early begun; thus mortals to the stars ascend, descendant of the gods, and from whom gods are to descend.”—*Davidson Translation*, 1811.

“Go on, increase in early valor, O boy! Such is the pathway to the stars, O descendant of the gods, and from whom gods are to descend.”—*Theo. A. Buckley's Davidson's Translation Revised*.

“On with fresh courage, boy! So mount the way  
To glory, thou of gods the son, of gods  
To be the sire.”—*John D. Long's Translation*.

“Go on, increase in valor, boy;  
Such is the pathway to the stary heights,  
Descendant and progenitor of gods.”—*Christ. P. Cranch's Translation*.

“Speed on in new-born valor, child!  
O son of Gods and sire of Gods.”—*William Morris's Translation*.

“Advance, illustrious youth! increase in fame,  
And wide from east to west extend thy name—  
Offspring of gods thyself; and Rome shall owe  
To thee a race of demigods below.  
This is the way to heaven: the powers divine  
From this beginning date the Julian line.”—*Dryden's Translation*.

PROBLEM. “A man has a field enclosed by a circular fence, the posts being one rod apart, and the fence ten rails high. There are as many acres in the field as there are rails in the fence. How many rails in the fence?”  
F. K. H.

FORMULATION OF THE DOCTRINES OF GAUTAMA THE BUDDHA. (Vol. VI, p. 300.) The doctrines of Gautama, like those of Confucius and Jesus, were epitomized into a few words, namely :

1. *Sabbbapápassa akaranam* ; 2. *Kusalassa upasampaddá* ; 3. *Sa chitta pariyo dapanam*. *Etam Buddhánu sáranam*.

1. To cease from sin ; 2. To get virtue ; 3. To cleanse one's own heart. This is the religion of the Buddhas.

These celebrated words have a meaning that should not be overlooked by the student of Buddhistic philosophy. The first line embodies the whole spirit of the *Vinaya* ; the second line embodies that of the *Sutta* ; the third embodies that of the *Abidhamma*. Thus in three lines, collectively comprising only eight Pali words, are condensed the entire essence of the Buddhistic Scriptures. According to Mr. Rhys-Davids, there are about 1,751,800 words in the whole text of the three *Pitakas*.

### *A Magic Square---Magic, Nasik, and 100-Ply.*

Particulars of the magic square on the opposite page, 20 numbers in each row, giving 400 numbers in all.

1. It is "magic," the rows, columns, and diagonals summing alike, namely, 4,010.

2. It is "nasik ;" any 20 consecutive numbers, in standing direction, taken at random, likewise sum 4,010. (In this point the square is to be imagined repeated indefinitely on all sides, as a pattern of wall paper ; but to avoid this trouble, the fact may be tested by dividing the square by an imaginary line anywhere in a horizontal or perpendicular direction, and the sum of the two short parallel diagonals will equal 4,010. Thus, divide, say, by line A B, then the diagonal A C added to its parallel short diagonal B D, will sum 4,010 ; or, the short diagonal D A added to its parallel C B will also sum 4,010.)

3. It is "100-ply ;" that is, any square group containing 100 numbers, taken at random, sums alike, namely, 20,050. (This may be proved, without going through the task of summing the groups, by noticing that any 10 consecutive numbers in any row, or column, taken at random, equals its corresponding parallel, 10 places distant. Thus, from 9 to 146 inclusive, in third column, equals the sum of the 10 parallel numbers from 259 to 396 inclusive, in thirteenth column ; and so on.)

T. S. BARRETT, London, Eng.

A

1	7	18	19	25	176	182	188	194	200	251	257	268	269	275	326	332	338	344	350
14	20	21	2	8	189	195	196	177	183	264	270	271	252	258	339	345	346	327	333
22	3	9	15	16	197	178	184	190	191	272	258	259	265	266	347	328	334	340	341
10	11	17	23	4	185	186	192	198	179	260	261	267	273	254	335	336	342	348	329
18	24	5	6	12	193	199	180	181	187	268	274	255	256	262	343	349	330	331	337
276	282	288	294	300	301	307	313	319	325	26	32	38	44	50	151	157	163	169	175
289	295	296	277	283	314	320	321	302	308	39	45	46	27	33	164	170	171	152	158
297	278	284	290	291	322	303	309	315	316	47	28	34	40	41	172	153	159	165	166
285	256	292	298	279	310	311	317	323	304	35	36	42	48	29	160	161	167	173	154
293	299	280	281	287	318	324	305	306	312	43	49	30	31	37	168	174	155	156	162
126	132	138	144	150	51	57	63	69	75	376	382	388	394	400	201	207	213	219	225
189	145	146	127	133	64	70	71	52	58	389	395	396	377	383	214	220	221	202	208
147	128	134	140	141	72	53	59	65	66	397	378	384	390	391	222	203	209	215	216
135	136	142	148	129	60	61	67	73	54	385	386	392	398	379	210	211	217	223	204
143	149	130	131	137	68	74	55	56	62	393	399	380	381	387	218	224	205	206	212
351	357	363	369	375	226	232	238	244	250	101	107	113	119	125	76	82	88	94	100
364	370	371	352	358	239	245	246	227	233	114	120	121	102	108	89	95	96	77	83
372	353	359	365	366	247	228	234	240	241	122	103	109	115	116	97	78	84	90	91
360	361	367	373	354	235	236	242	248	229	110	111	117	123	104	85	86	92	98	79
368	374	355	356	362	243	249	230	231	237	118	124	105	106	112	93	99	80	81	87

D

C

13

B

PYTHAGORAS'S DOCTRINE OF NUMBERS. What is the Pythagorean doctrine of numbers which has been several times alluded to in your pages ?  
ANDREW.

Mullach justly observes that the exposition of the significance and potency of numbers in the Pythagorean theory, would require an ample volume. He therefore notices them very briefly. The like course must be adopted here, and a summary, abridged from those given by S. Baring-Gould, must suffice.

1. The *Monad*, or unit, is the beginning and end of all. It is the symbol of existence, identity, equality, conversation and harmony.
2. The *Dyad*, or two, is the origin of contrasts, the symbol of diversity, division, change, and disorder.
3. The *Triad*, or three, is the first of unequals. It represents God and the soul of man.
4. The *Tetrad*, or four, is the most perfect of numbers ; the root, or origin, of all things ; when the soul derives its eternal nature ; it furnished the Pythagorean oath.
5. The *Pentad*, or five, is everything, supplying the principle of everything, and repelling evil spirits.
6. The *Hexad*, or six, is the number of good fortune.
7. The *Heptad*, or seven, is a sacred number, generating good and evil.
8. The *Octad*, or eight, the first cube, is a perfect number.
9. The *Ennead*, or nine, being the square of three, is sacred.
10. The *Decad*, or ten, the sum of the first four numbers, contains all numeric relations. All science proceeds from it and returns to it.

THE OATH OF PYTHAGORAS. (Vol. VI, p. 300.) The following is the form<sup>as</sup> given in Oliver's "Pythagorean Triangle," p. 103 :

" By that pure, Holy, Four-Lettered Name on high,  
Nature's eternal fountain and supply,  
The parent of all souls that living be,  
By Him, with faithful oath, I swear to thee.

MASCOT. (Vol V, p. 96.) The New York *Sun* (Dec. 23, 1888). says that the word *Mascot* comes from the French gambler's slang. An "escot" was something that brought luck to the owner ; in time, it became mascot, from *mon escot*, *mo'escot*, *m'ascot*. Audran, in his opera, "The Mascot," popularized the word.,

THE TOUR OF THE CHESS KNIGHT. I desire to present one tour which interested me several years ago. No doubt the publishers will present Volume I, Nos. 1 to 20, for the first correct solution sent to them. [We will.] ZENO.

lay	tle	on	dom	firm	still	square	qured
ly	and	press	day	the	board	ly	strike
bat	this	Per	a	free	to	chec	from
the	fierce	who	Greeks	down	Mar	for	on
reads	hard	thon	sian	youth	the	square	the
as	right	each	poured	at	horde	ward	fight
long	so	knight	ly	through	the	on	leaps
as	on	life's	may	up	bold	and	to

THE TUNE THE OLD COW DIED ON. How many have used this expression without any definite idea of its meaning or origin. It seems to have come to us from over the water. In Scotland and the north of Ireland this saying is very common in the mouths of the peasantry. It arose out of an old song which ran like this :

" There was an old man and he had an old cow,  
And he had nothing to give her ;  
So he took out his fiddle and played her a tune :  
Consider, good cow, consider ;  
This is no time of year for the grass to grow ;  
Consider, good cow, consider."

The old cow died of hunger ; and when any grotesque and melancholy song or tune is uttered, the north country people there say, that is " the tune the old cow died on."

O. H. L.



## Q U E S T I O N S .

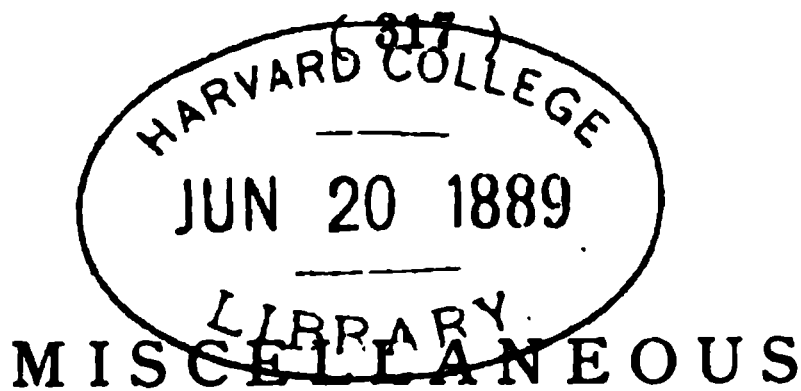
1. What was King Solomon's code of six principles which guided him in the administration of justice in Israel? A. A. D.
2. Of what fraternity is the lock-and-key the insignia? A. B. G.
3. Why is the *witch*-hazel and *witch*-grass so called? X.
4. What spoken language is the most expressive to preserve the true intent and meaning of the Hebrew language when translated into such spoken language? JACOB H. MORTON.
5. Did the inhabitants of Barbary in the north of Africa originally give the name *habrarians* to the northern hordes? LOGOS. —
6. Who is the first "seventh son" mentioned in the Bible. T.
7. What is said to be the first book written, now in existence; and also the first book written, not now extant? T.
8. What is said to be "Symmes's Hole" in the earth, and what book did he publish on the theory. PHILOMATH.
9. What systems have been proposed to hold correspondence between the inhabitants of the earth and the moon (if any), and who first proposed such correspondence? CYNTHIA.
10. Who were the 24 pseudo-christs (false-messiahs) who are said to have flourished in the Christian era? G. S. CLARK. —
11. What is the name of the plant on the leaves of which are the close resemblance of some of the Greek alphabet, and what is the legend in reference to the same? ENOCH.
12. What were the *words* to which Homer alludes, Iliad Book XII, line 112, "Pronounced those solemn words that bind a god," spoken by Jupiter? ALPHA.
13. What is *Koreshan* science mentioned in previous numbers of your magazine? E. L. B.
14. Does Homer, in the *Iliad* or *Odyssey*, mention "the wooden horse" which Virgil so graphically describes in his *Æneid* Book II? If not, how is the omission accounted for? ADELPHUS.
15. What islands are known as "the Devil's Land"? W.
16. What was the famous *wheel question* published in the *Scientific American* some twenty years ago? JONATHAN.
17. What were the names of Greek months, and how did they correspond with our calendar? ANDREW.
18. What have been the leading annual almanacs published in New England during the present century? IOWA.
19. In what book can the interpretations of the Cova, or Lintions, of Fohi be found? Can you publish them? MYSTIC.











# NOTES AND QUERIES,

WITH ANSWERS.

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*"The time is born for Enoch to speak, and Elias to work again."*—LAW.

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## *The Hexagrams of "The Yi King."*

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The "Yi-King" is one of the series of the Sacred Books of the East (Vol. xvi) edited by F. Max Müller ; it is Part II of the Sacred Books of China, the texts of Confucianism, translated by James Legge in 1854-55, though he says he did not understand its mysterious teachings till 1874. He claims that his interpretations will be approved by any sinologist who will examine the work, "Yü Kih Záh Kiang Yî King Kieh I," published in 1682 by the Han Lin College, which he calls "The Daily Lectures." Mr. Legge believes that King Wăn and his son Tan were the authors of the "Yî King." He believes with Mencius that "We must try with our thoughts to meet the scope of a sentence, and then we shall apprehend it." The late M. Mohl, who edited the "Yî King" in 1834, said of it, "I like it, for I come to it out of a sea of mist and find solid ground." In 1876, the Rev. Canon McClatchie published a version of the "Yî King, or Classic of Changes," his special object being "To open up the mysteries of Yî by applying to it the key of comparative mythology."

Confucius is reported to have said on one occasion : "If some years were added to my life, I would give fifty to the study of the Yî, and then I might come to be without great faults" (*Analects* VII, 16). He was over seventy when he uttered this, and shows the "Yî King" to have been in existence in his day, and he became fond of it and wrote an appendix to it ; his own copy had been read so much that the

leathern thongs holding the tablets together had been thrice worn out ; he said, " Give me several years, and I will endeavor to master the Yí."

The Cova or Lineation of which an interpretation was asked for by " K. T." (Vol. II, p. 650) has been explained by William T. Harris (Vol. III, p. 14). That was attributed to Fo-hi, or Fû-hsi, and contained 8 trigrams which date back to 3322 B. C. These eight were: 1. *k'ien* ; 2. *tui* ; 3. *lí* ; 4. *k'ăn* ; 5. *sun* ; 6. *khân* ; 7. *kăn* ; 8. *khwăn*.

King Wăn changed the arrangement of Fo hi's trigrams, and made them represent certain relations among themselves, as if they composed one family of parents and children thus :

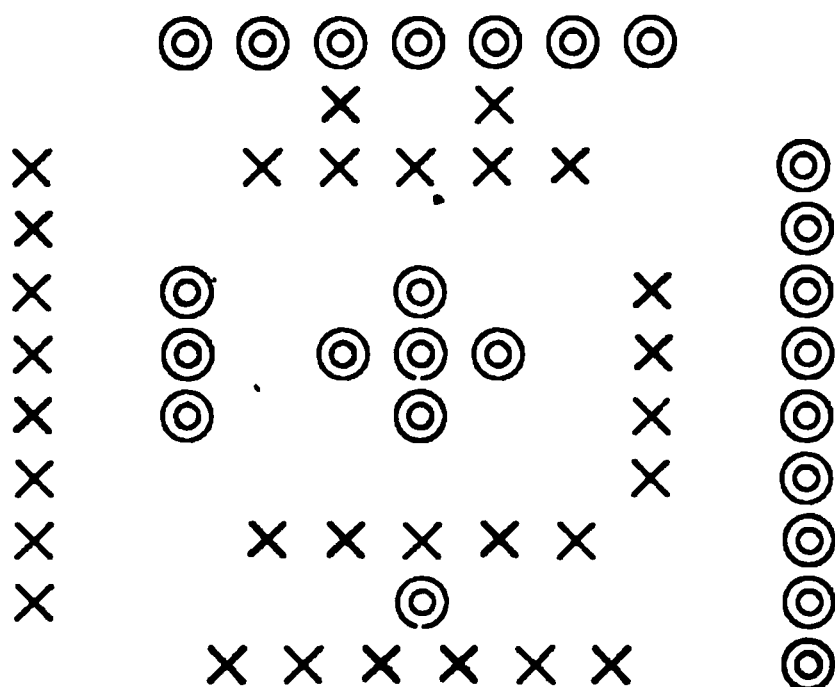
- |                                  |                                    |
|----------------------------------|------------------------------------|
| 1. <i>lí</i> , second daughter.  | 5. <i>khân</i> , second son.       |
| 2. <i>sun</i> , oldest daughter. | 6. <i>k'ien</i> , father.          |
| 3. <i>k'ăn</i> , oldest son.     | 7. <i>tui</i> , youngest daughter. |
| 4. <i>kăn</i> , youngest son.    | 8. <i>khwăn</i> , mother.          |

It is a mooted question who first multiplied the figures, universally ascribed to Fo-hi, to the 64 hexagrams of the Yí. No Chinese writer has explained why the framer stopped at 64 hexagrams, instead of going on to 128 figures of seven lines, 256 figures of eight lines, 512 figures of nine lines, and so on ; the cumbersomeness of the changes, and the impossibility of dealing with the changes after the manner of king Wăn, can only be the reason. The origin of the Cova and its amplification is given as follows :

" Heaven produced the spirit-like things (the tortoise and the divining plant), and the sages took advantage of them. (The operations of) heaven and earth are marked by so many changes and transformations, and the sages imitate them (by means of the Yí). Heaven hangs out its (brilliant) figures, from which are seen good fortune and bad, and the sages made their emblematic interpretations accordingly. Ho gave forth the scheme or map, and the Lo gave forth the writing, of (both of) which the sages took advantage."

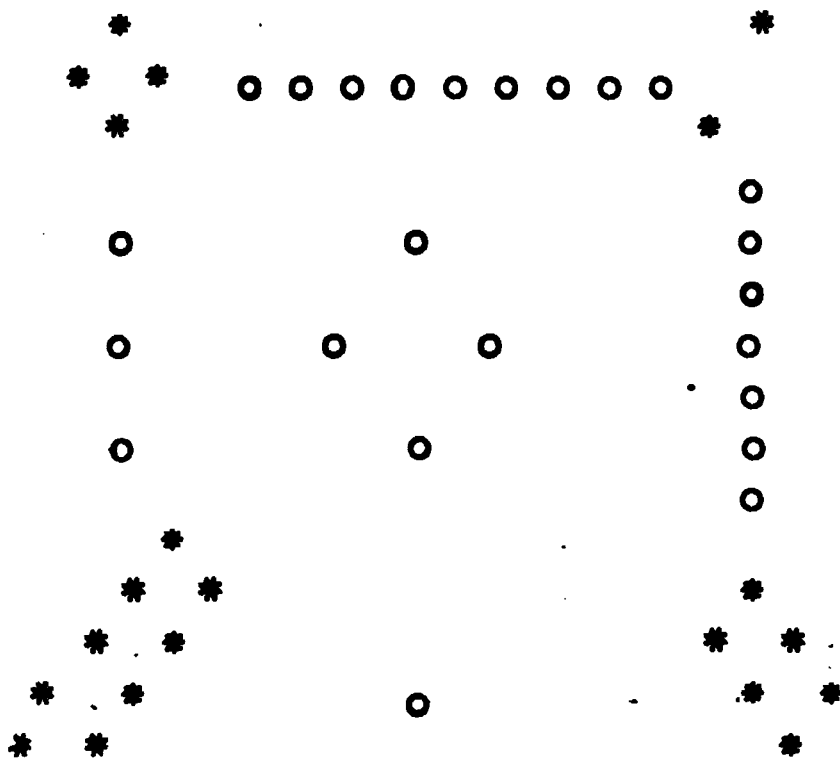
The Ho is the Yellow River which gave forth the map. This map, according to tradition, contained the outline which served as a model to Fo-hi to make his eight trigrams. Besides the above passage from the " Yí King " Confucius believed in, or spoke of, this map. The Chinese books say " the map was borne by a horse," and preserved in China. The modern story is that a dragon-horse issued from the Hoang Ho (Yellow River) bearing on its back the arrangement of marks which gave Fo-hi the idea. The map has perished, but its

form was restored A. D. 1101-1125. The most approved for m is this :



The delineations of the scheme are quite nearly divided, 25 circles to 30 crosses, a total of 55. The circles are 1, 3, 5, 7, 9 ; while the crosses are 2, 4, 6, 8, 10. These represent Yin and Yang, the dark and the bright, moon-like and the sun-like ; the moon is called the Great Obscurity (Thâi Yin) ; and the sun the Great Brightness (Thâi Yang). Fo-hi in beginning, and king Wăn in extending the trigrams, found it more convenient to use lines, the whole line ——— for the circle, and the divided line — — for the cross. The 1st, 3d, and 5th lines in a hexagram, if they are "correct," as it is termed, should be whole lines ; the 2d, 4th, and 6th should be divided lines. Yang lines are strong or hard, and Yin lines are weak or soft. The former indicate vigor and authority, and the latter feebleness and submission.

The accepted representation of the above delineation is as follows :





Substituting numbers for the number of marks, we have the magic square :

4	9	2
---	---	---

4	9	2
3	5	7
8	1	6

**There are, however, differences of interpretation of these schemes as there are doubts as to the original " River Map.**

Our phrase *vestiges of creation* illustrates the ever changing phenomena of growth and decay, and might be used as the best expression of "the traces of making and transformations" of the hexagrams. The whole subject is elaborately discussed by Mr. Legge in his translation of the "Yi King": introduction 55 pages, the "Yi King" 155 pages, appendixes 238 pages; total 448 pages.

Here follow the hexagrams and interpretations ; this articles also answers " MYSTIC " (Vol. VI, p. 316).

## The Sixty - Four Hexagrams.

8	7	6	5	4	3	2	1
p'f	sze	sung	hsü	mǎng	kun	khwǎn	khien
16	15	14	13	12	11	10	9
yü	khien	ta yü	chung zǎn	phf	haiáo	lí	hsiao k'ü
24	23	22	21	20	19	18	17
fú	po	p'f	shih ho	kwân	lín	k'ü	sui

82	81	80	29	28	27	26	25
hăng	hsien	lî	khan	tâ kwo	î	tâ k'ho	wû wang
40	39	38	37	36	35	34	33
k'ieh	k'ien	khwei	k'ia zăn	ming î	3in	tâ k'wang	thun
48	47	46	45	44	43	42	41
3ing	khwăn	shăng	3hui	kâu	kwâi	yî	sun
56	55	54	53	52	51	50	49
lî	făng	kwei mei	k'ien	kăn	kăn	ting	ko
64	63	62	61	60	59	58	57
wei 3î	k'î 3î	hsiáo kwo	k'ung fû	k'ieh	hwân	tui	sun

1. *Khien* (represents) what is great and originating, penetrating, advantageous, firm, and correct.

2. *Khăn* (represents) what is great and originating, penetrating, advantageous, correct, and having the firmness of a mare. When the superior man (here intended) has to make any movement, if he take the initiative, he will go astray ; if he follow, he will find his (proper) lord. The advantageousness will be seen in his getting friends in the south-west, and losing friends in the north-east. If he rest in correctness and firmness, there will be good fortune.

3. *Kun* (indicates that in the case in which it presupposes) there will be great progress and success, and the advantage will come from being correct and firm, (But) any movement in advance should not be (lightly) undetraken. There will be advantage in appointing feudal princes.

4. *Mãng* (indicates that in the case in which it presupposes) there will be progress and success. I do not (go and) seek the youthful and inexperienced, but he comes and seeks me. When he shows (the sincerity that marks) the first recourse to divination, I instruct him. If he apply a second and third time, that is troublesome ; and I do not instruct the troublesome. There will be advantage in being firm and correct.

5. *Hsü* intimates that, with the sincerity which is declared in it, there will be brilliant success. With firmness there will be good fortune ; and it will be advantageous to cross the great stream.

6. *Sung* intimates how, though there is sincerity in one's contention, he will yet meet with opposition and obstruction ; but if he cherish an apprehensive caution, there will be good fortune, while, if he must prosecute the contention to the (bitter) end, there will be evil. It will be advantageous to see the great man ; it will not be advantageous to cross the great stream.

7. *Sze* indicates how, in the case in which it supposes, with firmness and correctness, and (a leader of) age and experience, there will be good fortune and no error.

8. *Pi* indicates that (under the conditions which it supposes) there is good fortune. But let (the principal party intended in it) reëxamine himself, (as if) by divination, whether his virtue be great, unintermitting, and firm. If it be so, there will be no error. Those who have not rest will then come to him ; and with those who are (too) late in coming it will be ill.

9. *Hsião Hkû* indicates that (under its conditions) there will be progress and success. (We see) dense clouds, but no rain coming from our borders in the west.

10. (*Lî* suggests the idea of) one's treading on the tail of a tiger, which does not bite him. There will be progress and success.

11. Thái (we see) the little gone and the great come. (It indicates that) there will be good fortune with progress and success.

12. In Phí is the want of good understanding between the (different classes of) men, and its indication is unfavorable to the firm and correct course of the superior man. We see in it the great gone and the little come.

13. Thung Zăn (or 'Union of men') appears here (as we find it) in the (remote districts of the) country, indicating progress and success. It will be advantageous to cross the great stream. It will be advantageous to maintain the firm correctness of the superior man.

14. Tâ Yü indicates that (under the circumstances which it implies) there will be great progress and success.

15. K'ien indicates progress and success. The superior man (being humble as it implies), will have a (good) issue (to his undertakings).

16. Yü indicates that (in the state which it implies), feudal princes may be set up, and the hosts put in motion, to advantage.

17. Sui indicates that (under its conditions) there will be progress and success. But it will be advantageous to be firm and correct. There will be no error.

18. K'ü indicates great progress and success (to him who deals properly with the conditions represented by it). There will be advantage in (efforts like that of) crossing the great stream. (He should weigh well, however, the events of) three days before the turning point, and those (and those to be done) three days after.

19. Lin (indicates that under the conditions supposed in it) there will be great progress and success, will it will be advantageous to be firmly correct. In the eighth month there will be evil.

20. Kwân shows (how he whom it represents should be like) the worshipper who has washed his hands, but not (yet) presented his offerings, with sincerity and an appearance of dignity (commanding reverent regard).

21. Shih Ho indicates successful progress (in the condition of things which it supposes). It will be advantageous to use legal restraints.

22. Pí indicates that there should be free course (in what it denotes). There will be little advantage (however) if it be allowed to advance (and take the lead).

23. Po indicates that (in the state which it symbolizes) it will not be advantageous to make a movement in any direction whatever.

24. Fû indicates that there will be free course and progress (in what it denotes). (The subject of it) finds no one to distress him in his exits and entrances; friends come to him, and no error is committed. He will return and repeat his (proper) course. In seven

days comes his return. There will be advantage in whatever direction movement is made.

- 25. Wû Wang indicates great progress and success, while there will be advantage in being firm and correct. If (its subject and his action) be not correct, he will fall into errors, and it will not be advantageous for him to move in any direction.

26. Under the conditions of Tâ K'û it will be advantageous to be firm and correct. (If its subjects do not seek to) enjoy his revenues in his own family (without taking service at court), there will be good fortune. It will be advantageous for him to cross the great stream.

27. I indicates that with firm correctness there will be good fortune (in what is denoted by it). We must look at what we are seeking to nourish, and by the exercise of our thoughts seek for the proper aliment.

28. Tâ Kwo suggests to us a beam that is weak. There will be advantage in moving (under its conditions) in any direction whatever; there will be success.

29. Khan, here repeated, shows the possession of sincerity, through which the mind is penetrating. Action (in accordance with this) will be of high value.

30. Lî indicates that (in regard to what it denotes) it will be advantageous to be firm and correct, and that thus there will be free course and success. Let (its subject) also nourish (a docility like that of) the cow, and there will be good fortune.

31. Hsien indicates that, on the fulfillment of the conditions implied in it, there will be free course and success. Its advantageousness will depend on the being firm and correct, (as) in marrying a young lady. There will be good fortune.

32. H'ang indicates successful progress and no error (in what it denotes). But the advantage will come from being firm and correct; and movement in any direction whatever will be advantageous.

33. Thun indicates successful progress (in its circumstances). To a small extent it will (still) be advantageous to be firm and correct.

34. Tâ Kwang indicates that (under the conditions which it symbolizes) it will be advantageous to be firm and correct.

35. In 3in we see a prince who secures the tranquility (of the people) presented on that account with numerous horses (by the king), and three times in a day received at interviews.

36. Ming I indicates (in the circumstances which it denotes) it will be advantageous to realize the difficulty (of the position), and maintain firm correctness.

37. For (the realization of what is taught in) Kiâ Zăn, (or for the

regulation of the family) what is most advantageous, is that the wife be firm and correct.

38. Khwei indicates that (notwithstanding the condition of things which it denotes), in small matters there will (still) be good success.

39. In (the state indicated by) Kien advantage will be found in the north-west, and the contrary in the north-east. It will be advantageous (also) to meet with the great men. (In these circumstances), with firmness and correctness, there will be good fortune.

40. In (the state indicated by) Kieh advantage will be found in the south-west. If no (further) operations be called for, there will be good fortune in coming back (to the old conditions). If some operations be called for, there will be good fortune in the early conducting of them.

41. In (what is denoted by) Sun, if there be sincerity (in him who employs it), there will be great good fortune; freedom from error; firmness and correctness can be maintained; and advantage in every movement that shall be made. In what shall this (sincerity in the exercise of Sun) be employed? (Even) in sacrifice two baskets of grain (though there be nothing else), may be presented.

42. Yf indicates that (in the state which it denotes) there will be advantage in every movement which shall be undertaken, that it will be advantageous (even) to cross the great stream.

43. Kwâi requires (in him who would fulfill its meaning) the exhibition (of the culprit's guilt) in the royal court, and a sincere and earnest appeal (for sympathy and support) with a consciousness of the peril (involved in cutting off the criminal). He should (also) make announcement in his own city, and show that it will not be well to have recourse at once to arms. (In this way) there will be advantage in whatever he shall go forward to.

44. Kâu shows a female who is bold and strong. It will not be good to marry (such) a female.

45. In (the state denoted by) Zhui, the king will repair to his ancestral temple. It will be advantageous (also) to meet with the great man; and then there will be progress and success, though the advantage must come through firm correctness. The use of great virtues will conduce to good fortune; and in whatever direction movement is made, it will be advantageous.

46. Shăng indicates that (under its conditions) there will be great progress and success. Seeking by (the qualities implied in it) to meet with the great man, its subject need have no anxiety. Advance to the south will be fortunate.

47. In (the condition denoted by) Khwăn there may (yet be) progress and success. For the firm and correct, the (really) great man,

there will be good fortune. He will fall into no error. If he make speeches, his words cannot be made good.

48. (Looking at) zing, we think of how the site of a town may be changed, while the fashion of its wells undergo no change. The water of a well never disappears and never receives any great increase, and those who come and those who go can draw and enjoy the benefit. If the drawing have been nearly accomplished, but, before the rope has quite reached the water, the bucket is broken, this is evil.

49. (What takes place as indicated by) Ko is believed in only after it has been accomplished. There will be great progress and success. Advantage will come from being firm and correct. In that case occasion for repentance will disappear.

50. Ting gives the intimation of great progress and success.

51. Kăn gives intimation of ease and development. When (the time of) movement comes, (the subject of the hexagram) will be found looking out with apprehension, and yet smiling and talking cheerfully. When the movement comes like a crash of thunder all within a hundred Li, he will be like the sincere worshipper who is not startled into letting go his ladle and cup of sacrificial spirits.

52. When one's resting is like that of the back, and he loses all consciousness of self ; when he walks in his courtyard, and does not see any of the persons in it there, will be no error.

53. Kien suggests to us the marriage of a young lady, and the good fortune attending it. There will be advantage in being firm and correct.

54. Kwei Mei indicates that (under the conditions which it denotes) action will be evil, and in no wise advantageous.

55. Făng intimates progress and development. When a king has reached the point (which the name denotes) there is no occasion to be anxious through fear of a change. Let him be as the sun at noon.

56. Lü intimates that (in the condition which it denotes) there may be some little attainment and progress. If the stranger or traveler be firm and correct as he ought to be, there will be good fortune.

57. Sun intimates that (under the conditions which it denotes) there will be some little attainment and progress. There will be advantage in movement onward in whatever direction. It will be advantageous (also) to see the great man.

58. Tui intimates that (under its conditions) there will be progress and attainment. But it will be advantageous to be firm and correct

59. Hwân intimates that (under its conditions) there will be progress and success. The king goes to his ancestral temple ; and it will

be advantageous to cross the great stream. It will be advantageous to be firm and correct.

60. *Kieh* intimates that (under its conditions) there will be progress and attainment. (But) if the regulations (which it prescribes) be severe and difficult, they cannot be permanent.

61. *Kung Fû* (moves even) pigs and fish, and leads to good fortune. There will be advantage in crossing the great stream. There will be advantage in being firm and correct.

62. *Hsião Kwo* indicates that (in the circumstances which it implies) there will be progress and attainment. But it will be advantageous to be firm and correct. (What the name denotes) may be done in small affairs, but not in great affairs. (It is like) the notes that come down from a bird on the wing; to descend is better than to ascend. There will (in this way) be great good fortune.

63. *Kî 3î* intimates progress and success in small matters. There will be advantage in being firm and correct. There has been good fortune in the beginning; there may be disorder in the end.

64. *Wei 3î* intimates progress and success (in the circumstances which it implies). (We see) a young fox that has nearly crossed (the stream), when its tail gets immersed. There will be no advantage in any way.

It will be observed that we are reminded eight times, Nos. 5, 6, 13, 18, 26, 42, 59, and 64, when "to cross the great stream." This is supposed by some to refer to the Hoang Ho, or Yellow River, estimated to be 2,000 miles in length, flowing into the Whang-hai, or Yellow Sea.

Mr. Leggs's book contains 238 pages of appendixes, devoted to the interpretations and symbolizations of the 64 hexagrams, and those of our readers who wish to pursue the subject would do well to study the book.

**RAILROAD ITEMS.** The cost of railroads in the United States has been \$1,000,000,000.

The number of persons employed on railroads in the United States is 1,000,000.

The average cost of constructing a mile of railroad in the United States at the present time is \$30,000.

The average daily earning of an American locomotive is \$100.

The longest railroad bridge span in the United States is the Cantilever span in the Poughkeepsie bridge over the Hudson, 548 feet.

A steel rail lasts, with average wear, 18 years.



*Questions and Answers.*

HECTOR "THE SIXTH." Why was Hector named *The Sixth*? Our teacher says he cannot explain it. Also, how many children had Priam king of Troy? STUDENT.

These questions will have to be settled by the classics. There are two explanations to the first. They both involve genealogy. Anthon, in general, is the authority.

1. Erichthonius was the mythological son of *Vulcan and Minerva*, and expelled Amphictyon, an Attic king, from the throne of the Dardanian kingdom, and reigned instead. Erichthonius means "throne-expeller." He married Astyoche, and to them was born Tros.

2. Tros succeeded to the throne and called the kingdom Troas or Troy for himself. He married Callirhoë, daughter of Scamander, and to them were born Ilus, Assaracus, and Ganymedes.

3. Ilus succeeded to the throne, and called the kingdom Ilium, for himself. He married Eurydicë, daughter of Adrastus, and to them were born Themis and Laomedon.

4. Laomedon succeeded to the throne. He married Strymon, daughter of Scamander, and to them were born Tithonus, Lampus, Clitius, Hicetaon, Podarces (called also Priam), Hesione, and two others, whose names are not given. Hercules took the kingdom of Tros or Ilium under Laomedon, and among the prisoners was Podarces, who was ransomed by his sister Hesione. Podarces' name was changed to Priam which means "ransomed."

5. Priam was placed on the throne by Hercules. He had married Arisba, by order of his father, but on ascending the throne he was divorced from her, and married Hecuba, daughter of Dymas, the Phrygian, who, according to Homer, bore him nineteen children (*Iliad* xxiv, 616, Pope's translation). Their names were, alphabetically :

1. Agathon,	<i>Iliad</i> 24, 312.	11. Laocoön,	<i>Æneid</i> 2, 201.
2. Antiphon,	" 24, 315.	12. Laodicë,	<i>Iliad</i> 3, 165.
3. Cassandra,	" 24, 870.	13. Mestor,	" 24, 321.
4. Creüsa,	<i>Æneid</i> 2, 562.	14. Pammon,	" 24, 314.
5. Deiphobus,	<i>Iliad</i> 24, 313.	15. Paris,	" 24, 312.
6. Dius,	" 24, 313.	16. Polites,	" 24, 312.
7. Doryclus,	" 11, 611.	17. Polydorus,	" 20, 271.
8. Hector,	" 24, 313.	18. Polyxena,	<i>Æneid</i> 3, 421.
9. Helenus,	" 24, 314.	19. Trolius,	<i>Iliad</i> 24, 322.
10. Hippothoüs,	" 24, 314.		

Hector was the eldest son, (Thomas's "Univ. Biog. and Myth. Dictionary, article *Hector*), and the kingdom would have succeeded to him at Priam's decease, and hence he would have been the *Sixth* king, reckoning from the expulsion of the Attic king, Amphictyon. The Trojan kings claimed to be the direct descendants from the gods, and Hector was the *Sixth* in direct line from Vulcan.

**BIRTHPLACE OF HOMER.** (Vol. II, p. 642.) Antipater of Sidon, according to Thomas's "Universal Biographical and Mythological Dictionary," page 1202, says "Seven cities contend for the race or origin of the wise Homer." He names the cities as "Smyrna, Chios, Colophon, Ithaca, Pylos, Argos, and Athens." These vary from those already given in your pages, Ithaca and Pylos in place of Salamis and Rhodes.

OBSERVER.

**AGE OF JACOB'S SONS.** (Vol. VI, p. 276.) The ages of the "Twelve Patriarchs" are given slightly different in the Talmud, according to H. Polano, in his "Selections," page 137, from those in the "Testament of the Twelve." Polano's work gives them thus:

Reuben 125, Simeon 120, Levi 137, Judah 129, Issachar 122, Zebulon 114, Dan 124, Naphtali 132, Gad 125, Asher 123, Benjamin 120, and Joseph 110. Total, 1481 years; average,  $123 \frac{1}{2}$ , or one year more than in the former article in average.

OBSERVER.

**"STILL WATERS RUN DEEP."** (Vol. VI, p. 252.) This saying can be found almost in Proverbs xviii, 4: "The words of a man's mouth *are as* deep waters." That is words have deep significance, especially ancient, unsophisticated, spontaneous; not modern arbitrary words. also, Proverbs xx, 5: "Council in the heart of man *is like* deep water." That is, human resources for help are in himself, but lay deep, and only understanding is needed to draw it up and out. Water is a very ancient emblem of truth.

E. M. E., M. D.

**MORNING PRAYER.** Vol. VI, p. 252.) The writer did not see the "call for a morning prayer," mentioned by "ISRAEL," but here is one used in his family for many years past:

"I thank Thee, Lord, for last night's sleep;  
My soul, I pray Thee, this day keep;  
And if I die ere close of day,  
Take Thou, my soul, O Lord, I pray."

J. M. R.

*The Sum of Two Numbers is = to Their Product.*

(Vol. v, p. 206 ; Vol. vi. p. 241.)

Let  $x$  = one of the numbers, and  $y$  = the other ; and  $a$  = their algebraic sum = to their product. Supposing that the numbers are different ; then, from the conditions, we have  $x + y = a$ , and  $xy = a$ .

Solving, we have  $x = \frac{a + \sqrt{a^2 - 4a}}{2}$ , and  $y = \frac{a - \sqrt{a^2 - 4a}}{2}$ .

1. From these we see that every negative value of  $a$  will give real and unequal values of  $x$  and  $y$ , one positive and the other negative. Hence there is an *infinite* number of *numbers*, one positive and one negative, *whose sum* is equal to *their product*.

2. If  $a = 0$ , both numbers become 0, and their sum and product are 0.

3. If  $a$  is positive and less than 4, both values will be imaginary. Hence there are *no numbers* whose product is between 0 and 4 which can have their *sum* equal to their *product*.

4. If  $a = 4$ , the numbers become 2 and 2. Their *sum* is 4 and their *product* is 4, but these are equal and excluded by the enunciation of the problem.

5. If  $a$  is positive and greater than 4, the values will be real and unequal, and both positive. Hence there is an *infinite number* of numbers *both positive* whose *sum* and *product* are equal.

6. In order that these numbers be commensurable,  $a^2 - 4a$  must be a perfect square, and there will be an *infinite* number of *such* numbers. For instance:

If  $a = -\frac{1}{2}$ ,  $x = \frac{1}{2}$  and  $y = -1$ .

If  $a = -\frac{1}{8}$ ,  $x = \frac{1}{8}$  and  $y = -\frac{1}{2}$ .

If  $a = \frac{25}{8}$ ,  $x = \frac{5}{2}$  and  $y = \frac{5}{8}$ .

If  $a = \frac{9}{2}$ ,  $x = 3$  and  $y = \frac{3}{2}$ , etc.

7. In order that both numbers be *whole* numbers  $a$  must be a whole number ; for the *product* of two whole numbers cannot be a irreducible fraction nor incommensurable. Moreover,  $\sqrt{a^2 - 4a}$  must be a whole number ; for an incommensurable number or irreducible fraction added to or subtracted from a whole number cannot give a whole number, and the result divided by 2 could not be entire.

But  $\sqrt{a^2 - 4a}$ ,  $a$  being a whole number, *cannot* be a whole number. Hence no two *whole* numbers, either equal or unequal, except 2 and 2,

can have their sum equal to their product. This can be easily proved, thus,  $N$  being a whole number,

$$1 + N > 1 \times N \text{ or } N.$$

$$2 + N < 2 N, \text{ unless } N = 2, \text{ when } 2 + N = 2 N.$$

$$3 + N < 3 N, \text{ if } N \text{ be greater than } 2.$$

$$4 + N < 4 N, \text{ if } N \text{ be greater than } 2.$$

$$5 + N < 5 N, \text{ if } N \text{ be greater than } 2.$$

6 etc.

$M + N < MN$ . That is, the product of *no two whole numbers*, one of which is greater than 2, can have *their sum* equal to *their product*.

G. H. HARVILL, B. A., Ada, La.

THE RIVER SAMBATYON. (Vol. V, p. 211.) According to the book on the "New World" entitled *Holam Hadas*, printed at Venice, the author says "the river Sambatyon is on the borders of India Upper, beyond the river Ganges, which is in our language called Gozan, as declared in II Kings xvii, 6 : 'about Halah and Habah, mountains of Gozan and Media.'"

The word Sambatyon means the "the Sabbatical" river. It is said in the Talmud that this river flows during the secular six days of the week and dries up on the Sabbath. Josephus says it is the reverse :

"It runs in the middle between Arcea, and belonging to Agrippa's kingdom and Raphanea. It hath somewhat very peculiar in it ; for when it runs, its current is strong and has plenty of water ; after which its springs fail for six days altogether, and leave its channel dry, as any one may see ; after which days it runs on the seventh day as it did before. and as though it had undergone no change at all ; it hath also been observed to keep this order perpetually and exactly ; whence it is that they call it the Sabbatic River, that name being taken from the the sacred seventh day among the Jews."—*Wars of the Jews*, VII, v, 1.

According to Pliny (*Nat. Hist.* xxxi, 11) it ran perpetually on *six* days and rested on the *seventh*.

THE FIRST SEVENTH SON. (Vol. VI, p. 316.) It has been said that the first *seventh son* recorded in the Bible is *Tiras* son of Japhet (Gen. x, 2.) Others say it is *Diklah* son of Joktan (Gen. x, 27.) Others say that only sons' names were recorded in genealogy and that daughters were omitted ; such claim *Fiblah* son of Nahor (Gen xxii, 22). While one says it is *Massa*, son of Ishmael (Gen. xxv, 14).

## QUESTIONS.

—O—O—O—

1. Whose translation of the *Iliad* and *Odyssey* is the most copious with notes, explanations, etc.? LEON.
2. Who was the first man, according to the Chinese who antedate the Hebrew Scriptures by many thousand years. SEARCHER.
3. What is the meaning of the two French names *Quatremère* and *Quatrefages*, two authors? LEWELLYN.
4. Is there any allusion to Jesus of Nazareth in the works of Flavius Josephus? WELLINGTON HOWARD.
5. How many different names of Gautama Buddha? Several authors before me give each a different name. OBSERVER.
6. What is the explanation of the four different reports mentioned in the poem of Job (1, 14, 16, 17, 18), as having been brought to that patriarch by four different messengers each claiming, "I only am escaped to tell thee." X.
7. How many are meant by the expression "nearly ten thousand strong," which is so often heard? B. C.
8. Several years ago a book was published anonymously in New York entitled *Hyponoia* with remarks upon the *Parousia*. What is the meaning of these words? NOAH.
10. A person traveling in the West cannot but observe the many towns and cities beginning with O. For instance: Oconto, Oklahoma, Omaha, Onawa, Osceola, Oskaloosa, Oshkosh, Ottawa, Ottumwa, Owatonna, Owasso, etc. Is there a preponderance of such names? Are they of Indian origin? LOGOS.
11. Whence come the phrase "poor as Job's turkey"? E. O.
12. Homer's *Iliad* II, 790, and Virgil's *Æneid* III, 106, say Crete had 100 cities. Homer's *Odyssey* XIX. 197, says 90 cities. How is the discrepancy explained? READER.
13. What is the explanation of the detention of Ulysses in the Island of Ogygia by Calypso, the *Concealer*? Also, how Ulysses was charmed in the Island of *Ææa* by Circe, the *Ring*? G. S. C.
14. What philosopher defined man to be "a two-legged animal without feathers"? L. L. W.
15. Why does Edward Young, in his "Night Thoughts," IV, 827, call "Truth, eldest daughter of the Deity"? Jesus says, "I am the way, the truth, and the life" (John XIV, 14). JAMES.
16. A medal was struck at Rome to commemorate the massacre St. Bartholomew. One account says it bore the legend "*Hugonotoru strages*." Another account says it was "*Ugonottorum strages*, 1572." What is the English of these inscriptions? J. O. E.











MISCELLANEOUS  
 NOTES AND QUERIES,  
 WITH ANSWERS.

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"*A phitosopher resteth not, unless he have the center of a thing.*"—Law.

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*Waste - Basket of Words.*

[From Journal of American Folk-Lore, Vol. I, No. IV, 1889.]

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*Buttermunk*.—Bittern. South Berwick, Me. "Moäst loike a butter-bump." Tennyson, "Northern Farmer." — W. A. Hayes, Cambridge, Mass.

*Coast*.—The word was common in my boyhood which was passed in Wayne and the neighboring counties in New York State, although the sense was usually the riding over fences, etc., upon the hard crust formed upon the surface of the snow. "Sliding down hill" was the term assigned to riding in or upon the highway. No one taught us the distinctions, yet they were generally observed. The people were second and third generations from New England. — A. S. Roe, Worcester, Mass.

The word appears to have been a local term of the neighborhood of Boston.--W. W. Newell.

In Toronto, Canada, *slide* or *ride* is said to be the common term, though *coast* is sometime heard.—A. F. Chamberlain, Toronto.

*Diddledees*.—This seems a curious instance of a strictly local word. At Hyannis, in my boyhood, it was the universal name for the fallen pine needles that carpet the ground in the woods. They were gathered by the cart-load, and largely used for kindlings. I never heard this word outside the village, and persons in the adjacent towns did not know what it meant.—Sylvester Baxter, Boston.

*Dreen*.—To this day, in Wayne County, N. Y., this form is more common than *drain*, both as noun and verb.—A. S. Roe.

*Gas*.—This word, considered as slang, has not been accepted by lexicographers. In the United States it is much used in the sense of

idle talk, windy eloquence, a signification indicated by a supposed derivation from *gas*, air ; as we say *gas-bag*. But an older meaning of our word is *boast*, or brag. "That is all *gas* ;" it's nothing but bombast ; a *gassy* man, one who boasts of his prowess ; "none of your *gassing*," none of your nonsense. In England the use is more idiomatic. Holten, in his "Slang Dictionary," London, 1874, has : "Gas, to give off superfluous conceit, to bounce or brag ; 'his game is Gas.' To give a person gas is to scold him or give him a good beating ; synonymous with 'to give him Jessie.'" The word doubtless comes from the mediæval French *gab*, *gas*, mockery, raillery,. "Ce n'est pas *gas*," it is not a joke. It is also used in the sense of insult or derision : to say *gas* to any one ; "childreu will give you *gas*," will mock you, as a blind man in the street (Godefroi, Dictionary). Hence the English word, which has nothing to do with *gas*, an aeriform fluid, a word made up by Von Helmont, in the 17th century.—W. W. Newell.

*To-noon*.—In my boyhood, at Hyannis, Cape Cod, it was common to say *to-noon* in the same sense in which *to-night* is used. For instance, "Where are you going *to-noon* ?" I remember the astonishment expressed by some friends from Boston at my using it, and that was the first time I learned that the word was not as correct as *to-night*. That was in 1865 or 1866, and I do not know whether the expression is still in use in that part of the world.—Sylvester Baxter.

KING SOLOMON'S CODE OF SIX PRINCIPLES FOR JUSTICE. (Vol. VI, p. 316.) Rev. Moses Edrehi, in "The Book of Miracles," page 278, says that the extraordinary and magnificent throne of Solomon was said to have been built by the spirit of prophecy ; that what is said in I Kings is explained by Rabbi Aha to be the six steps to Solomon's throne ; and on that magnificent throne he sat when he administered justice to the people ; and on the six steps to the throne were written the six following verses, which were concerning justice :

First step—"Thou shalt not wrest judgment."

Second step—"Thou shalt not respect persons."

Third step—"Neither take a gift."

Fourth step—"Thou shalt not plant thee a grove."

Fifth step—"Neither shalt thou set thee up any image, which the Lord thy God hateth."

Sixth step—"Thou shalt not sacrifice unto the Lord thy God any bullock or sheep, wherein is blemish.—*Deut.* xvi, 19.

These six verses were written on the front of the steps ; and when the king ascended the throne he repeated the first verse on the first step, the second on the second step, the third on the third, and so on.

EPITAPH ON DIOPHANTUS. The following epitaph on Diophantus is found in "Mathematical Questions and Solutions from the *Educational Times*," Vol. XLIX, 1888. Will some one give an English translation for those who cannot read the Latin :

Hic Diophantus habet tumulum, qui tempora vitæ  
Illius mira denotat arte tibi.  
Egit sextantem juvenis; lanugine malas  
Vestire hinc coepit parte duodecima.

Septante uxori post hæc sociatur, et anno  
Formosus quinto nascitur inde puer.

Semissem ætatis postquam attigit ille paternæ  
Infelix subita morte peremptus obit.  
Quatour ætates genitor lugere superstes  
Cogitur: hinc annos illius assequere.

H.

## TRANSLATION.

"Here Diophantus has a tomb, who marks out for you with wonderful art the periods of his life. A youth he passed the sixth part; then he begins to cover his cheeks with down during a twelfth part. A seventh part after this he is united to a wife, and then in the fifth year a beautiful boy is born. After the latter has attained half of his father's age, unhappy he perishes, carried off by sudden death. Four summers the surviving father is forced to mourn; from this find out his years."

## SOLUTION.

Let  $x$  = Diophantus's age.

5 years = nascitur puer.

$\frac{x}{6}$  = egit juvenis.

$\frac{x}{2}$  = semissis ætatis paternæ.

$\frac{x}{12}$  = lanugine malas, etc.

4 years = genitor lugere, etc.

$\frac{x}{7}$  = septante post hæc.

$$\frac{x}{6} + \frac{x}{12} + \frac{x}{7} + 5 + \frac{x}{2} + 4 = x$$

$$14x + 7x + 12x + 420 + 42x + 336 = 84x$$

$$9x = 756$$

$$x = 84$$

M. F. K.

The time in which Diophantus lived is in some doubt. Different writers place it between B. C. 200 and A. D. 400. He was ranked with Archimedes, Euclid, and Pythagoras as a mathematician. He wrote a work in thirteen books entitled "Arithmetical Books." Six of these are extant and embrace what is now known as Diophantine analysis.

The first traces of the science of algebra is found in his works. He also wrote a work on "Polygonal Numbers," now extant, and cites another on "Corollaries."

**SOLUTION OF PROBLEM.** (Vol. VI, p. 235.) A man desires to reach home exactly at 12 o'clock noon. If he travels 10 miles an hour, he arrive home 2 hours too soon; but if he travels 6 miles an hour, he arrives home 2 hours to late. How far is he from home?  
C. C.

Let  $x$  = number of miles from home; then  $x \div 10 + 2$  = number of hours to go home, and  $x \div 6 - 2$  = numbers of hours to go home.

$(x \div 10 + 2) = (x \div 6 - 2)$ .  $6x + 120x = 10x + 120x$ .  $4x = 240$ .  $x = 60$  miles from home. GEO. A. SANBORN, Rochester, N. H.

**GOLDSMITH A PLAGIARIST.** "When lovely woman stoops to folly." "In this age of plagiarism-hunting it does not seem to be generally known that Oliver Goldsmith, strange compound of good and evil, who 'wrote like an angel but talked like poor poll,' was a plagiarist of the strongest brand. We will hope it was only in starving penny-a-lining days that the bard sank so low, winning and wearing laurels not his own without a qualm. Perhaps what has endeared him to us is his touching little song — (did he make it in those wild wandering days between 1756 and 1759?) —

When lovely woman stoops to folly,  
And finds to late that men betray,  
What charm can sooth her melancholy—  
What art can wash her guilt away?

The only art her guilt to cover,  
To hide her shame from every eye,  
To give repentance to her lover,  
And wring his bosom—is to die.

But it was Segur, an obscure French poet in the early 18th century, who really owns those laurels and wrote those lines, and has probably been turning in his grave ever since Goldsmith robbed him. A copy of Segur, printed in Paris in 1719, contains the follow :

Lorsqu'une femme, apres trop de tendresse,  
D'un homme sent le trahison,  
Comment, pour cette si douce faiblesse,  
Pent-elle trouver une guévison?

Le seul remede qu'elle pent ressentir,  
Le seul revanche pour son tort,  
Pour faire trop tard l'amant repentir,  
Hélas ! trop tard—est la mort.

Ah? Brigand de Goldsmith ! It is a neat bit of translation ; but why didst thou not acknowledge the victim."—*St. James Gazette*.

L. H. A., Chicago, Ill.

*Magic Squares.*1.  
1888.

457	485	483	463
479	467	469	473
471	475	477	465
481	461	459	487

2.  
1889.

470	470½	473	475½
472½	476	469½	471
471½	469	474½	474
475	473½	472	468½

3.

22	862	202	802
682	322	502	382
742	142	922	82
442	562	262	622

4.

862	202
322	502

5.

485	483
467	469

The magic square No. 1 is that printed on back of your index, Vol. V, for 1888, but it is not a perfect one, as it lacks some of the properties possessed by a perfect one. The center diagonals, the rows, and the columns add 1888, it is true, likewise the four corners, and *some* of the square groups of four numbers. But in a *perfect* square, (with root 4) all the groups, and every diagonal of four numbers (supposing the entire square repeated on all sides), should add 1888. Now No. 3 is a perfect square. For instance, No. 4 is one group from it and adds 1888. But the corresponding group No. 5 from No. 1 does not add 1888. In the language of some writers these more perfect ones are said to be "magic," "four-ply," and "nasik;" *magic* means

that the rows, columns, and center diagonals add and make the number ; *four-ply* is when all groups of four add and make the number ; and *nasik* when *all* diagonals add and make the number. Squares cannot be made for odd numbers when root is 4. Fractions would have to be inserted as in No. 2 ; but that is not allowable, as a magic square must consist of integers.

The very curious square with 64 numbers, printed in the January (1888) NOTES AND QUERIES, is interesting as it happens to illustrate the knight's tour on the chess-board. But regarded simply as a magic square it is far from a perfect one—not even the center diagonals summing up the number. Nor is it the *greatest*. For when the principle of making magic squares is understood, they can be made of any size desired.

T. S. BARRETT, London, Eng.

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PHILIP AND FELIPE. (Vol. VI, p. 236.) The *Herald*, of Toronto, contains the following article on the spelling of the name Philip, and its Spanish form Felipe :

*Notes and Queries* [Manchester, N. H.], asks "why the Spanish spel Philip *Felipe* ?" We *wud* like to no why they have 'Felipe' instead of 'Fil.' They use *f* for *ph* generally, a change bro't with other changes by reform in Sp. orthog. 60 or 70 years ago. Portugal stil adheres to *ph* for *f*—Philippe—as stupidly as we. In Italian it is Filippo. Use of *ph* for *f* never prevaild in Italian. It began to gro in pre-Italian, or latter days, but died out. About the first cent. pedantic Greeklings, not accepting Latin F as equivalent to Greek *f* (named *fi*) tho not of quite same shape, began to "sho off" by using *ph*, a way of representing this sound by the Greeks before they aded the new leter *fi* to their alfabet. That this had spred a litl in popular favor is probabl, as in some scribling on walls of Pompeii that we hav seen, necessarily ritn in or before first cent., *ph* is found for *f*. Suthern Italy was calld Magna Grecia, as setld by Greek colonis. Tho there it is not found in classic Latin. Filip means lover (*filos*) of the hors (*hippos*) which explains *f*, singl *l*, doubl *p* of Italian. It is remarkabl how in Italian names, speld by them with *f*, we insist ofn on the retrograde change to *ph*. Thus we spel their great painter as Raphael while on his tomb in the Pantheon at Rome and thruout Italian literature it is ever speld with *f*.

SURVIVOR OF THE HANNIBAL HAMLIN FAMILY. (Vol. IV, p. 266.) The statement that Hannibal Hamlin "is the only survivor of the family" is a mistake. The sister of Hannibal Hamlin, Ann (Hamlin) Browne, now lives in Paris, Maine, a widow lady, highly respected and esteemed.

CALCHAS.

## QUESTIONS and ANSWERS.

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**JESUS AND JOSEPHUS.** (Vol. VI, p. 332.) This question should be answered before it is asked three times more. The edition of Josephus's works by William Whiston, Baltimore, 1832, contains the following in "Antiquities of the Jews," XVIII, III, 3, in reference to Jesus :

"Now there was about this time Jesus, a wise man, if it be lawful to call him a man, for he was a doer of wonderful works, a teacher of such men as receive the truth with pleasure. He drew over to him both many of the Jews, and many of the Gentiles. He was [the] Christ. And when Pilate, at the suggestion of the principal men amongst us, had condemned him to the cross, those that loved him at the first did not forsake him ; for he appeared to them alive again the third day, as the divine prophets had foretold these and ten thousand other wonderful things concerning him. And the tribe of Christians, so named from him, are not extinct to this day."

With this we will print the same reference to him from the edition of Josephus's works, London, 1656 :

"At that time was Jesus, a wise man, if it be lawful to call him a man. For he was a performer of divers admirable works, and the instructor of those who willingly entertain the truth ; and he drew unto him divers Jews and Greeks to be his followers. This was Christ, who being accused by the Princes of our nation before Pilate, and afterward condemned to the cross by him ; yet did not those who followed him from the beginning, forbear to love him for the ignominies of his death. For he appeared to them alive the third day after, according as the Divine Prophets had before testified the same, and divers other wonderful things of him ; and from that time forward the race of the Christians, who have derived their name from him, hath never ceased."

This famous allusion to Jesus first appeared in the time of Eusebius, who died about A. D. 340. It is claimed to be a settled fact Josephus did not write the passage as we have it.

**PWAN KOO, THE FIRST MAN.** (Vol. VI, p. 332.) Hung-su-tseuen, the Chinese historian, says God is the one common parent and from of old there was but one family, and the first man was *Pwan koo*, and down through three dynasties both prince and people together honored one heaven ; one feeling pervaded heaven and men.



THE FIRST SAVIOUR MENTIONED IN THE BIBLE. (Vol. VI, p. 300.)  
 The first *Saviour* mentioned as such in King James's version is in II Samuel xxii, 3 : "*He is my shield, and the horn of my salvation, my high tower, and my refuge, and my saviour.*" But the question of "LOGOS" does not limit it to one version; hence if one will examine the Douay Version, Genesis xli, 45, he will find that it reads:

"And he turned his name, and called him in the Egyptian tongue the saviour of the world."

"The saviour of the world" is rendered from the Latin Vulgate, *salvator mundi*; this from the Septuagint, *Psonthomphanéch*; this from the Hebrew, *Tsaphenath Paaneäch*. This is the name that Pharaoh gave to Joseph.

The Rabbins interpret Zaphnath-paaneah as Hebrew, in the sense of "The revealer of a secret." Josephus, in "Antiquities" II, 6, 1, says that Joseph "enjoyed great honors from the king, who called him *Psthom Phanech*, out of regard for his prodigious degree of wisdom; for that name denotes *the revealer of secrets*. Theodoret follows Josephus. Isidore and Jerome adopt the interpretation, "the saviour of the world." Jablonski proposes as the Coptic of the Egyptian original *psot m-phenet*, "the preserver of the age." The Hebrew form is *Z-ph-a-th P'-n-ch*, and may well be rendered "food of life." The Septuagint makes it *Psonthomphanéch*, meaning "he who gives joy to the world," from which the Vulgate rendered it "*salvator mundi*."

"WITNESS MY HAND." (Vol. I, p. 46.) Bouvier's "Law Dictionary" says: "Formerly the hand was considered as the symbol of good faith and come contracts derive their names from the fact that the hand was used in making them." So at the present time people sometimes shake hands on the completion of a contract or wager as a pledge of good faith. I have also read somewhere that in former times a grantor who had no seal nor coat-of-arms, smeared his hand with ink and placed it on the indenture under the words *Witnes my hand*. In modern times it has been declared by statute, at least in Illinois, that any kind of scroll or mark printed or written at the close of the signature, will be considered a good and sufficient seal, but the grantor is still required to set his hand to the indenture and make his mark.

J. G. GHOLSON, Broughton, Ill.

**CORRESPONDENCE WITH THE LUNARIANS.** (Vol. VI, p. 316.) In 1800 there was published in London a small work entitled "Some Account of an Existing Correspondence now Carrying on between the Inhabitants of the Moon and the Natives of this Country." It was a burlesque, being correspondence between Ezekiel Gobble & Co., of *New City*, in the Moon, 20th July, 1796, and General Snap and Colonel Trap, of *London*, 13th January, 1800.

Gruithuisen, in a conversation with the great continental astronomer Gauss, says the *Edinburgh New Philosophical Journal*, October, 1826, page 395, after describing the regular figures he had discovered in the moon, spoke of the possibility of correspondence with the lunar inhabitants. He brought to Gauss's recollection the idea he had communicated several years ago to Zimmerman. Gauss answered, that the plan of erecting a geometrical figure on the plains of Siberia corresponded with his opinion, because according to his view, a correspondence with the inhabitants of the moon could only be begun by means of such mathematical contemplations and ideas which we and they must have in common. Were the lunarians to recognize such a figure, erected on an immense scale, as a signal of correspondence, they might perhaps erect a similar one in reply. Rev. Thomas Dick, of Scotland, suggested a trial of the scheme by erecting a triangle or ellipse of many miles extent, in Siberia or some other country, which might at the same time serve as an accommodation to thousands of inhabitants, who are now roaming the deserts like the beasts of the forests, and then have astronomers watch for a response from the lunarians.

Rev. John Wilkins, in 1802, published in London, "A Discourse on the Possibility of a Passage to the Moon," and tending to prove that our satellite is inhabited.

**"FAMILIARITY BREEDS CONTEMPT."** (Vol. VI, p. 252.) Rev. Leigh Hunt, author of "The Dairyman's Daughter," once in a letter of advice wrote the maxim, "Familiarity breeds contempt." It may be older, however.

A. WILDER.

**IZZARD AND ZED.** (Vol. VI, p. 252.) Z was named *izzard* in the last and preceding centuries. It probably was a corruption of S-hard. *Zed*, from *Zeta*, is English, and we find it in Shakespeare. I think it is still used, as I have heard the same.

A. WILDER.

**CWENILA.** (Vol. VI, p. 316.) Cwenila is the ancient god of the Mexicans. The image of it is very ancient. Kircher has a plate of it in his "Œdipus Ægypticus," taken from a manuscript in the Vatican Library. It is described as follows: The head is square, with radiant eyes; the ears are those of a wolf; the mouth is toothed, and is supposed to resemble the Leviathan's, whose "teeth *are* terrible round about" (Job xli, 14). The nose is the crescent moon; the chin is a solar circle, under which are three dots, and beneath these a symbol resembling a gothic letter M. He has six hands, four on the right and two on the left; two hands hold vases; under the left ear is a cock's head; on his left arm are three rings. Various heads of animals surround him. His feet are those of an elephant; the all-seeing eye is under the right eye, and a man's head with tongue out under the left; under the all-seeing eye is a cat; under the man's head is a serpent-headed sword sceptre. In many respect it corresponds with the ancient Hindu figure. It is full of symbology.

**HOW MANY HAVE ENTERED PARADISE ALIVE?** This questions has raised a discussion in our Sunday school, and I send it to N. AND Q. for an answer. TEACHER.

There is a difference of opinion as to the number. Christians say Enoch (Gen. v, 24), Elijah (II Kings ii, 11), Jesus (Luke xxiv, 21). Others include John the apostle (John xxi, 23). Others, yet, include Moses (Luke ix, 30).

The Talmud says (Derech Eretz Zuta I) *nine* have entered alive into paradise, and they are:

"Enoch, the son of Jared; Elijah, the Tishbite; the Messiah; Eliezer, the servant of Abraham; Hiram, king of Tyre; Ebed Melech, the Ethiopian; Jabez, the son of Rabbi Yehuda the prince; Bathia, the daughter of Pharaoh; and Sarah, the daughter of Asher."

**VOTING IN SECRET SOCIETIES.** (Vol. VI, 300.) The manner of voting in secret societies is usually conducted by four methods, thus: Aye and nay, raising of the right hand pro and con, calling the roll of membership, and ball ballots. The latter varies in that some use white and black balls, while others use balls and cubes. Applicants are usually elected or rejected, dismissed, suspended, or expelled by the ball ballot. The other business is conducted by the other modes, as their constitutions may direct.

THE GREEK MONTHS. (Vol. VI, p. 316.) The names of the Greek months given in Seffrarth's "Chronology," page. 167, are here given :

Gamelion,	Apellæus,	4th December.
Anthesterion,	Andynæus,	3d January.
Elaphebolion,	Peritius,	2d February.
Munychion,	Dystrus,	4th March.
Thargelion,	Xanthicus,	3d April.
Scirophorion,	Artemisius,	3d May.
Hekatombæon,	Dæsius,	2d June.
Metageitnion,	Panemus,	2d July.
Boedomion,	Lous,	1st August.
Pyanepsion,	Gorpiæus,	31st August.
Mæmacterion,	Hyperberetæus,	30th September.
Posedion,	Dius,	30th October.
5 Epagomenoi,	5 Epagomenoi,	29th November.

THE FAMOUS "WHEEL QUESTION." (Vol. VI, p. 316.) This question was proposed in the *Scientific American*, in 1868 :

"How many revolutions upon its own axis, will a wheel make in rolling once around a fixed wheel of the same size?"

The question brought to the editor of that paper many replies all claiming to have solved it. Yet the replies were about equally divided as to the number of revolutions, one part claiming *one* revolution and the other *two* revolutions. So much interest was manifested in it that Munn & Co. published *The Wheel*, June, 1868. It contains 72 pages, giving many of the solutions, illustrated by many diagrams.

RE-INCARNATION. What persons besides Pythagoras and Jesus have claimed to be reïncarnations of some previous spirit? W.

. This question involves the doctrine of metempsychosis, or transmigration of souls. Metempsychosis is the ensouling of the spirit, so that it may be developed in a material sphere. Metasomatosis is the migration of the soul from body to body, as from man to man, or animal to animal. Palingenesia is regeneration, or a new birth.

The claims of Jesus, as set forth in Scripture, are familiar to all. He distinctly says of John the Baptist, "this is Elias that was to come." (Matt. xi, 14 ; Mal. iv, 5).

Pythagoras believed in the doctrine, taught it, and claimed to remember when he was himself no other than *Euphorbus*, who was in the Trojan war. The following is taken from Ovid's *Metamorphoses*, book xv, where Pythagoras is represented as relating his experiences :

"Our souls are not subiect to death ; but, leaving their former seats, are received into different habitations, and renew life in other forms. Even I, (for I remember it well), who declare these truths, was, in the time of the Trojan war, Euphorbus, son of Panthous ; and and bore in my opposed breast the heavy spear of the yonnger son of Atreus. I lately recollect the buckler, which I wore upon my left arm, as I saw it hanging in the temple of Juno at Argos, where Abas formerly reigned. All things are thus but altered ; nothing dies."

The Welsh Druid Taliesin always claimed that he himself was the reïncarnation of a former inhabitan of this earth.

FLEMISH FOLK-LORE (Vol VI, p. 250). THE PHŒNIX (Vol. VI, p. 298.) I have been much interested in many articles discussed in your pages, especially in some of the semi-mythological subjects such as the Golden Fleece, The Phœnix, Folk-Lore, etc. I desire to add a little more matter to the two latter subjects as here referred to. Anthon's "Classical Dictionary," p. 1054, has some information that in the manner of finding the Great Platonic Year, slightly varies from the folk-lore table. I will give what he says :

The of this fable [The Phœnix] is evidently astronomical, and the following ingenious explanation has been given by Marcoz. He assumes as the basis of his remarks the fragment of Hesiod preserved by Plutarch in his treatise *De Oraculorum Defectu*.

"The noisy crow lives nine generations of men who are in the bloom of years ; the stag attains the age of four crows ; the raven, in its turn, equals the stag's in length of days ; while the phœnix lives nine ravens. We nymphs, fair of tresses, daughters of Jove, the ægis-bearer, attain to the age of ten phœnixes."

The whole computation turns upon the meaning of the term *generation*. Marcoz takes the moon for his guide ; and as this luminary ceases, like man to exist, only, like him, again to arise, the period of its revolution becomes the standard required. Then  $27\frac{1}{2}$  days converted into  $27\frac{1}{2}$  years, give the measure of a generation among men. Reducing this, in order to make the analogy with the moon as complete as possible, he gives  $26\frac{2}{3}$  years as the result. The computation is as follows :

9 generations of men, of the life of a crow, make	$234 \div 6 =$	240
4 lives of the crow, or that of a stag, make	.	960
3 lives of a stag, or that of a raven, make	.	2,880
9 lives of the raven, or that of the phœnix, make	.	25,920

This period of 25,920 years is precisely the duration of the Great

year of the fixed stars, having for its element exactly  $50''$ , the annual precession of the equinoxes. From this computation also we shall be enabled to perceive how  $50''$ , converted into years, and multiplied by  $1+2+3+4$ , that is by 10, gave the Egyptians 500 years as the duration of the phoenix. These numbers,  $1+2+3+4$ , indicate that the  $50''$ , converted into years, traverse successively the four quarters of ecliptic, in order to form the Great Year, the astronomical duration of the life of the phoenix.—*Macoz's Salar Astronomy of Hipparchus.*

JOHN JOHNSON.

MEANING OF PISCATAQUOG. (Vol. V, p. 96, 141; VI, 230.) Referring to the meaning of Piscataquog as applied to the New Hampshire river, the Abbé Maurault says it comes from the Abenakio word "Pekata," signifying "gloomy."

STEPHEN BERRY.

WATER RISING BEFORE A DROUTH. (Vol. II, p. 368.) I have a cistern dug nine feet in earth and then fourteen feet in solid rock. Not a drop of water to my knowledge ever entered this cistern through the rock until toward the close of the great drouth in 1887. I had been hauling water from a creek and using it out of the barrel. The cistern had been cleaned out preparatory to a rain. A short time before the termination of the drouth I concluded to empty a barrel of water into the cistern, and to my astonishment I found already about a barrel of good water, though not quite soft, in the basin at the bottom of the cistern. I considered this so nearly a miracle that I hailed a couple of passing neighbors, and had them taste the water and witness the wonder.

As to the explanation it is my opinion that there at least exists, at times, an electrical affinity or attraction between the waters under the earth and those above it, that causes the former to rise and meet the latter, as in the case of water-spouts at sea. That an electric current accompaies streams of water passing through the ground is proved by the pulling down of the divining-rod in the hands of the "water-witch," a fact of which the most skeptical may convince themselves, if they will find a stream large enough and close enough to the ground. as I did at Elizabethtown, Ill., where a stream as large as a barrel runs under the road and empties into the Ohio, near at hand.

"There are more things in heaven and earth, Horatio,  
Then are dreamt of in your philosophy."

J. G. GHOLSON, Broughton, Ill.

ISAIAH THOMAS—UNITED STATES OF COLUMBIA. (Vol. VI, p. 11.) I suppose that Isaiah Thomas was moved and inspired with the sentiments current at the time of his publications. Up to 1791, American Independence was the foremost sentiment. Next came the sentiment of Union. Mr. Thomas was a strenuous Federalist. About that time it was felt that the country ought to have a name of its own., in place of one that it shared with the whole Western continent. Mr. Thomas therefore placed the name of Columbia on his publications, in the hope to lead public sentiment to fix and crystallize upon it. I have seen the name, "United States of Columbia," on the title-page of one of his books. It did not succeed, but to the contrary, at the present time, only a resident of the United States is recognized in Europe as an "American."

A. WILDER.

THE GREAT EASTERN AND NOAH'S ARK. (Vol. VI, p. 268.) The dimensions of the "Great Eastern" are : Total length, 692 feet ; breadth of beam, 83 feet ; depth, 68 feet. The dimensions of the Ark were : Length, 300 cubits ; breadth, 50 cubits ; depth, 30 cubits. The Ark was therefore about 550 feet in length ;  $91\frac{1}{2}$  feet in breadth ; and 55 feet in depth ; the cubit being 22 inches. As compared with the Ark, the Great Eastern is 142 feet longer,  $8\frac{1}{2}$  narrower, and 13 feet deeper.

MRS. J. T. GEORGE, Chicago, Ill.

JOHNSWORT. (Vol. VI, p. 68.) I think the name of the herb alluded to derives its name from St. John, as it is also called St. John's wort, its botanical name being *Hypericum* ; probably so called because its leaves were formerly applied to fresh wounds which they were supposed to heal.

MRS. J. T. GEORGE.

"POWWOWING." (Vol. VI, p. 252.) A priest or conjurer among the North Americans is called a "Powwow." Also, conjuration performed for the cure of diseases, and other purposes, attended with great noise and confusion, and often with dancing. Hence a noisy assembly, or frolic. "Powwowing" has most probably originated from the Indian word.

MRS. J. T. GEORGE.

X'S ON BEER CASKS. (Vol. VI, p. 252.) The X on beer casks indicates beer which had to pay ten shillings duty, and hence it came to mean beer of a given quality. Two or the crosses are mere trade-marks, intended to convey the notion of twice or thrice as strong as that which pays ten shillings duty.

MRS. J. T. GEORGE.

THE ERA E. M. (Vol. V, p. 148 ; VI, p. 263.) The liberal paper called *Lucifer* has the following in reference to the era E. M. :

"We date from the first of January, 1601. This era is called the Era of Man to distinguish it from the theological epoch that preceded it. In that epoch the earth was supposed to be flat, the sun was its attendant light revolving about it. Above was heaven where God ruled supreme over all potentates and powers ; on earth ruled the Pope as the vicegerent of God ; below was the kingdom of the Devil, Hell. So taught the Bible. Then came the New Astronomy, the astronomy of Copernicus, Galileo, and Bruno. It demonstrated that the earth is a globe revolving about the sun ; that the stars are worlds and suns ; that there is no "up" and "down" in space. Bruno sealed his devotion to the new truth with his life on the 17th day of February, 1600. During the 17th century Grotius wrote the first work on international law."

T. S. B.

LOUD-VOICED PERSONAGES. (Vol. VI, p. 268.) I will suggest several pretty loud-voiced personages, to select from. Stentor of the *Iliad* (Bk. v, lines 786-789) had a voice louder than fifty men. Then the angel of the Apocalypse who cried "as *when* a lion roareth, and when he had cried, seven thunders uttered their voices." If any thing can beat that it must be the trump of the archangel calling up the dead.

A. W.

LUXOR, (EGYPT). (Vol. VI, p. 284.) Luxor does not mean "more light," but "the palaces" (el-kusr), so called from the temple erected there by Amundoh III and Ramses II. Also called Hecatompylos on account of its hundred gates, and Diospolis as being sacred to Jupiter. In the time of its splendor (1600-800 B. C.) it is said to have extended about 33 miles. Thebes was ruined by Cambyzes king of Persia, 525 B. C., and by the foundation of Alexandria, 332 B. C. It rebelled and was taken by Ptolemy Lathyrus 86 B. C., and few traces of it were seen in the age of Juvenal. After centuries of neglect, it has been greatly visited since the explorations of Belzoni, in 1817.

MRS. L. T. GEORGE.

GENERAL ORMSBY MCKNIGHT MITCHEL'S NAME SPELLED WITH ONE L. (Vol. VI, p. 284.) I have six biographical sketches of Gen. Mitchel and in none of them is his name spelled with two l's.

MRS. J. T. GEORGE.



## Q U E S T I O N S .

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1.
  - a. Why does Father Time in the symbol always carry a scythe?
  - b. Did the ancient Greeks really sound the initial letter in the pronunciation of such names as Mnemosyne, Ptolemy, Tmolus, Tlepolemus, Psammentius, Psophis, etc.
  - c. What gave the name to certain properties of magic squares used on page 312, current volume; it is not in Webster.
  - d. Who wrote the books published by the title of "!!! " and also, "?? " and what is the character of each book?
  - e. When did the Julian Period begin, and why?
  - f. Was Alexander Selkirk and Robinson Crusoe one and the same person in Defoe's books? Where does Defoe say, "Thirteen times I have been rich and poor," which is credited to him?
  - g. What is the correct spelling of that character in *Faust* classically given as *Mephistophilus*? I have seen it Mephistopheles, Mephistophiles, Mephistocles, and Mefistofeles. ALONZO.
2. Can some reader inform me about the originality and meaning of the superstition about the "Irish bone"? H. R.
3. Which reading is adopted by Christian denominations, of Psalm 11, 8, King James version? It reads as follows:  

"Ask of me, and I shall give *thee* the heathen *for* thine inheritance, and the uttermost parts of the earth *for* thy possession."

Without the italicized supplied words, which I have been informed can be omitted in this version, it reads:

"Ask of me, and I shall give the heathen thine inheritance, and the uttermost parts of the earth thy possession."

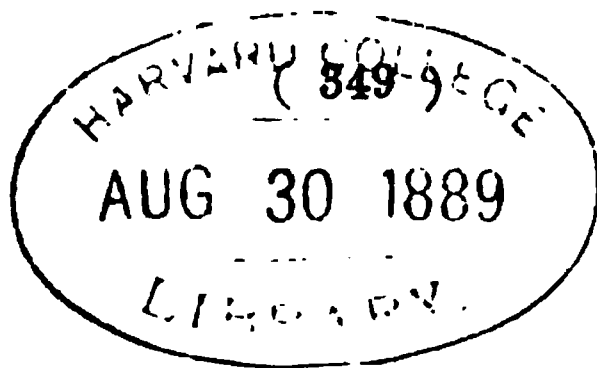
One will readily observe that the promise of the first is the reverse of the latter. ALLEN B. COOKE.
4. I have seen it stated that the Platonic philosopher, Thomas Taylor, wrote his own epitaph. Can some one give it? PRO BONO.
5. Has the introduction of the new language called *Visona*, made by Arthur Merton of Chicago, been taught or tried by any school or otherwise? In my judgment it is far more simple, comprehensive, and complete than Volapük. L. O. K.
6. Which letter of the alphabet is said to be the most mystical and why is one more mystical than another? READER.
7. Is the surface of a river convex when rising, and concave when falling? and if so why? J. G. GHOLSON.
8. Why does a cork, when put into a glass tumbler full of water rise and remain in the center, which is the highest part of the water? J. G. GHOLSON, Broughton, Ill.











## MISCELLANEOUS

# NOTES AND QUERIES,

WITH ANSWERS.

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*"Heaven is one ; how can there be more than one God there?"*—LAO TSEU.

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VOL. VI.

SEPTEMBER, 1889.

No. 9.

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**FATHER TIME WITH HIS SCYTHER.** (Vol. VI, p. 348.) Saturnus of Saturn (in Greek *Chronus*) is Time. He was the son of Coelus or Uranus (heaven) and Terra (earth). He was naturally artful and by means of his mother Terra revenged himself on his father Coelus whose cruelty to his children had provoked the anger of Terra. She armed her son Saturn with a scythe fabricated from metals, and with it mutilated his father. Therefore Saturn obtained his father's kingdom by consent of his brothers whom he had liberated from the infernal regions where Coelus had confined them. In process of time Saturn ill-treated his male offsprings as his own father did, for he feared retaliation by his sons, hence his sister-wife Rhea concealed the three male children Jupiter, Neptune, and Pluto from him by deceiving him. When manhood arrived Jupiter usurped his father's (Saturn) throne and divided the kingdom among the three brothers—Jupiter reigning over heaven and earth, Neptune over the sea, and Pluto over the under world or infernal regions. Saturn was banished into Italy where the country took the name Latium, from *lateo*, as being the place of his *concealment*. Hence Saturn is represented as an old man bent through age and infirmity, holding a *scythe* in his right hand, with a serpent biting its own tail, which are symbols of Time and the revolution of the year. "Time cuts down all both great and small." Hence the symbol ♄ for Saturn or Time.

## On Magic Squares.

(By T. S. Barrett, London, Eng.)

1000	804	81	4
2	83	800	1004
803	1001	5	80
84	1	1003	801

**1889.**

As many readers of NOTES AND QUERIES are interested in what relates to the properties of numbers, perhaps they may welcome a few more words on magic squares. The Egyptians and Pythagoreans attached a superstitious veneration to these combinations of numbers, and even carried them about as talismans. Mathematics, however, shows that the wrong thing was wondered at. It would be much

more wonderful if numbers could *not* be arranged as in magic squares.

Look at the diagram at the head of this article. How many other "four-root" squares could be made for 1889? To some it may be a surprise that even one could be made; for it is often said that a four-root square (so called, as 4 is the square root of the total number of cells in it) cannot be made for an odd number — still less for a prime number. 1889 is both. Nevertheless, there are *thirteen billions* of others possible—very likely more. Not counting their various different arrangements among themselves, the different sets of numbers alone that are available for forming such a square, amount to, at least, 67,695,000,000. This at first seems very remarkable, considering that a person, new to the subject, might be many weeks before hitting upon right numbers and their proper arrangement when found. Here mathematics again removes our wonder by bidding us think of the enormous number of possible squares that are *not* magic—a number so vast that billions are infinitesimal in comparison. As a fact, the permutations of 1889 things, taken 16 at a time, may be counted by a number 53 figures long; in words, it is twenty-five thousand octillions.

Of course, any wonderful square might, in one sense, be called magical; but here I restrict the term to the usual technical meaning. A "magic square," then, must have these three properties; it may have others in addition; but these are essential:

1. It must consist entirely of *integers*.
2. Each cell must be occupied by a different number.
3. All the rows and columns, also the two diagonals, must sum alike.

The principle underlying the formation of magic squares is that of superposition (used by M. de La Hire, to a limited extent). If we have two or more squares, not magic, provided their rows, columns, and diagonals add alike, — a new square formed by adding together the numbers in the corresponding cells of the others, will *sum* magically, and *may*, under certain circumstances be a proper magic square.

A.	B	C.																											
<table border="1"><tr><td>7</td><td>1</td><td>4</td></tr><tr><td>1</td><td>4</td><td>7</td></tr><tr><td>4</td><td>7</td><td>1</td></tr></table>	7	1	4	1	4	7	4	7	1	<table border="1"><tr><td>1</td><td>2</td><td>—</td></tr><tr><td>—</td><td>1</td><td>2</td></tr><tr><td>2</td><td>—</td><td>1</td></tr></table>	1	2	—	—	1	2	2	—	1	<table border="1"><tr><td>8</td><td>3</td><td>4</td></tr><tr><td>1</td><td>5</td><td>9</td></tr><tr><td>6</td><td>7</td><td>2</td></tr></table>	8	3	4	1	5	9	6	7	2
7	1	4																											
1	4	7																											
4	7	1																											
1	2	—																											
—	1	2																											
2	—	1																											
8	3	4																											
1	5	9																											
6	7	2																											

Thus, the squares A and B are not magic, as they have duplicate numbers ; but they *add* magically ; the summation of A is 12 in all ways, that of B is 3. The square C formed by adding the respective numbers in the two others, likewise adds magically ; the summation being 15, the sum of 3 and 12. It is also a proper magic square, there being no duplicates. The three-root square however is the least interesting of magic squares ; for it admits of no variation of arrangement, and can only give summations that are multiples of 3.

All 3-squares are of this form—

$a+b$	$a+2c$	$a+2b+c$
$a+2b+2c$	$a+b+c$	$a$
$a+c$	$a+2b$	$a+b+2c$

where  $a$ ,  $b$ , and  $c$  are any numbers. The summation is  $3(a+b+c)$  ; and therefore it must be a multiple of 3.

We pass on to the four-root square.



A	B	C	D
D	C	B	A
B	A	D	C
C	D	A	B

—	g	e	f
e	f	—	g
f	e	g	—
g	—	f	e

Let the letters in the squares above, as in algebra, stand for any number we please. It will be observed that both squares sum magically ; the summation being  $A+B+C+D$  in the one, and  $e+f+g$  in the other. But neither is a magic square, as each letter is repeated four times. However if we combine the two by superposition, the resulting square is properly magic ; the summation being  $A+B+C+D+e+f+g$ . Thus :

A	$B+g$	$C+e$	$D+f$
$D+e$	$C+f$	B	$A+g$
$B+f$	$A+e$	$D+g$	C
$C+g$	D	$A+f$	$B+e$

If, then, we substitute for letters such numbers that no duplicates occur, we shall obtain the magic square required. One certain way to avoid duplicates is to let the *greatest* of the three numbers  $e, f, g$ , be *less* than any difference between  $A, B, C$ , and  $D$ , when the latter are arranged in order of magnitude. This is how I made the square 1889. Put  $A=1000$  ;  $B=800$  ;  $C=80$  ;  $D=1$  ;  $e=1$  ;  $f=3$  ;  $g=4$ . These values sum 1889. The greatest of  $e, f, g$ , viz. 4, is considerably less than any of the differences between  $A, B, C, D$  ; so there is no

possibility of duplicates. On substituting for the letters as above ( $A$  ;  $B+g$  ;  $C+e$  ; etc.,) in the last square, their numerical values, the magic square will be formed.

Considering the immense variety of seven numbers that make the total 1889, the estimate of the number of squares previously given can be easily credited.

Magic squares whose roots are multiples of 4 may be made in a similar manner; but an easier method for such "evenly-even" squares (as they are called),—when the summation required is a multiple of *half the root*,—is that of making them in "compartments" (to be described presently).

"Oddly-even" squares (*i. e.* those whose roots are 6, 10, 14, etc.), are made with difficulty. The methods to be employed in their case would, however, take up too much space to describe now.

Squares whose roots are odd numbers, are easier than any others to make. The following is the method when the root is not a multiple of 3. Let the root be 5, for example :

No. 1.

A	B	C	D	E
C	D	E	A	B
E	A	B	C	D
B	C	D	E	A
D	E	A	B	C

No. 2.

-	f	g	h	i
h	i	-	f	g
f	g	h	i	-
i	-	f	g	h
g	h	i	-	f

The letters, as before, stand for any number at pleasure. On combining the two squares, by adding together the corresponding cells, the resulting square will have, in all directions, the summation of  $A+B+C+D+E+e+f+g+h+i$ ,—and will be magic, if we choose such numbers that will not form duplicate combinations.

It will be observed that each row has the letters in the same order, but beginning at a different point. In No. 1, each row, after the first, begins with the *third* letter of the row above, whereas in No. 2, each begins with the *fourth*. It is necessary to make this difference, or the combinations of letters in the resulting square would be repeated.

These methods of making magic squares give all summations. By "all summations" is meant all above the lowest possible for any root. The lowest possible in a three-square is 15 ; in a four-square, 34 ; in a five-square, 65 ; and so on. If  $r$  signify the root, than the lowest possible is always  $\frac{r^3+r}{2}$  and occurs of course, when the square is filled with consecutive numbers commencing with 1.

It is not essential that A, B, C, and the other capital letters should always be the greatest numbers. For example, the values of 1, 2, 3, 4, to the capital letters, and 4, 8, 12, to e, f, and g, will make a four-square summing 34. Thus,

1	14	7	12
8	11	2	13
10	5	16	8
15	4	9	6

Similarly a five-square, summing 65, will arise from the numbers 1, 2, 3, 4, 5 ; and 5, 10, 15, 20.

A square capable of all summations may immediately be changed into another simply by altering the highest numbers in it. Thus, the square above will be turned into one summing 35, by adding 1 to the four highest numbers in it (13, 14, 15, 16). If 2 be added, it is changed into a square for 36 ; and so on. Similarly a five-square capable of all summations can be altered by increasing its five highest numbers. But any attempt to alter squares *not* capable of all summations will simply result in the destruction of their magic properties.

All magic squares excepting those whose roots are 4, 6, and prime numbers, may be made in what Montucla calls "compartments." That is, the square may be made to consist of a group of smaller magic squares. Thus,

An 8-square may contain 4 squares with root 4.  
 A 9-square     "     "     9     "     "     3.  
 A 10-square    "     "     4     "     "     5.  
 A 12-square    "     "     9     "     "     4.  
                              or 16     "     "     3.  
 A 14-square    "     "     4     "     "     7.  
 And so on.

There are two ways of achieving this. One, applicable to all cases where the small squares are not three-squares, is to make these subsidiary inner squares all sum alike, though consisting of different numbers. Thus a group of four different squares, each summing 130, will be a root-eight square, summing 260. When the roots of the small squares are odd numbers, it is rather troublesome (though not impossible, excepting in the case of a three-square) to make them sum alike ; and in such cases it is easier to adopt a method that is applicable to all compound roots, except 8 and oddly-even. The way is, to give *different* summations to the inner squares, and then to arrange them in accordance therewith, as if each were merely the number in a cell of a magic square. Thus, suppose we have 9 root-three squares, summing respectively 15, 42, 69, and so on in arithmetical progression ; then, if we arrange them according to their summations, the whole becomes a root-nine square, summing 369. Thus,

42	177	150
231	123	15
96	69	204

If the great 20-root magic square with 400 cells (published in NOTES AND QUERIES, Vol. VI, p. 313) be examined, it will be seen it is made in "compartments" in the above manner. It consists of 16 squares of root 5, the summations of which form the arithmetical progressions 65, 190, 315, &c., increasing by the common difference of 125. If the 16 cells of a four-square be filled with these numbers, in a similar or any other magic order, the summation will be identical, namely, 4,010.

To return for a moment to the subject of "all summations." It may be useful to know that there is a way applicable to all magic squares (excepting the three-square) of altering the summation, when it is required equal to, *or greater than*,  $\frac{r^3+r}{2} + r^2$ .

The plan is, to increase (not the greatest numbers, but) any numbers that may happen to be in cells, so selected that one and only one shall be in each row, one and only one in each column, and one and only one in each diagonal. Let us take as an illustration a four square formed according to Montucla's method, and which is *not* capable of all summations.

9	6	7	12
4	15	14	1
16	3	2	13
5	10	11	8

Suppose we desire to raise the summations from 34 to 51. We must add 17 to four of the numbers. Let us select 6, 1, 2, and 5 for this purpose, as one of them (and only one) is in each row, column, and diagonal. On the alterations being made, the new square will be found to sum 51 as required. But if instead of choosing 51, we should try to get a summation that requires the addition of a number less than  $r^2$  (in this case 16), we may get duplicate numbers. Thus, on adding 15, we get another 16; on adding 10, all four become duplicates; and if we add only 1 or 2, duplicates will arise whatever cells we choose for alteration.

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SURNAMES BEGINNING WITH I. (Vol. VI, p. 252.) I have counted the names in the index of Lower's "Essays on English Surnames," which amount to 5390. A 262, B 550, C 446, D 279, E 117, F 260, G 312, H 376, I 48. J 76, K 81, L 249, M 359, N 91, O 77, P 375, Q 16, R 193, S 578, T 288, U 15, V 55, W 262, X 1, Y 22, Z 2.

Lloyd, although a British surname, is not to be found in the index.

MRS. L. T. GEORGE.

*Questions and Answers.*

**THE WANDERING JEW.** (Vol. V. p. 69.) The Wandering Jew of Greek tradition is Aristeas, a poet, who continued to appear and disappear alternately for above 400 years, and who visited all the mythical nations of the earth.

Of Jewish story, tradition says that Cartaphilos, the door-keeper of the judgment hall in the service of Pontius Pilate, struck our Lord as he led him forth, saying, "Get on! faster, Jesus!" Whereupon the man of sorrows replied, "I am going, but tarry thou till I come [again]." This man afterwards became a Christian, and was baptized by Ananias under the name of Joseph. Every hundred years he falls into a trance, out of which he rises again at the age of 30.

The earliest account of the Wandering Jew is in the Chronicles of the Abbey of St. Alban's, copied and continued by Matthew Paris (1228). In 1242 Philip Mouskes, afterwards bishop of Tournay, wrote the "rhymed chronicle."

Another legend is that Jesus, pressed down by the weight of the cross, stopped to rest at the door of a cobbler named Ahasuerus, who pushed him away, saying, "Get off! away with you, away!" Our Lord replied, "Truly, I go away, and that quickly, but tarry thou till I come." This is the legend given by Paul Von Eitzen, bishop of Schleswig, in 1547.—*Greve*, "Memoirs of Paul Von Eitzen," 1547.

A third legend says it was the cobbler Ahasuerus who haled Jesus to the judgment seat; and that as the man of sorrows stayed to rest awhile on a stone, he pushed him, saying, "Get on, Jesus, you shall not stay!" Jesus replied, "I truly go away, and go to rest; but thou shalt go away and never rest till I come."

In German legend, the Wandering Jew is associated with John Buttadæus, seen at Antwerp in the 13th century, again in the 15th, and again in the 17th centuries. His last appearance was in 1773, at Brussels. Leonard Doldius, of Nüruburg, in his "*Praxis Alchymiae*" (1604), says that the Jew Ahasuerus is sometimes called "Buttadæus." Signor Gualdi, who had been dead 130 years, appeared in the latter half of the 18th century, and had his likeness taken by Titian. One day he disappeared as mysteriously as he had come. — "*Turkish Spy*," ii (1682).

In the French legend the French call the Wandering Jew Isaac

Lakedion or Laquedem.—Mitternacht, "Dissertatio in Johan," xxi, 21.

In Dr. Croly's novel, the name given to the Wandering Jew is Salathiel Ben Sadi, who appeared and disappeared toward the close of the 16th century at Venice, in so sudden a manner as to attract the attention of all Europe. Dr. Croly in his novel called "Salathiel" (1827), traces the course of the Wandering Jew; so does Eugene Sue, in "Juif Errant" (1845); but in these novels the Jew makes no figure of importance.

G. Doré, in 1861, illustrated the legend of the Wandering Jew in folio wood engravings.

It is said in legend that gipsies are doomed to be eternal wanderers because they refused the Virgin and Child hospitality in their flight into Egypt.—Aventinus, "Annalium Boiorum," liber septem, vii. (1554).

The legend of the Wild Huntsman, called by Shakespeare "Herne the Hunter," and by Father Matthew "St. Hubert," is said to be a Jew who would not suffer Jesus to drink from a horse-trough, but pointed out to him some water in a hoof-print, and bade him go there and drink.—Kuhn von Schwaznordd, Sagen, 499.

MRS. L. T. GEORGE, Chicago, Ill.

CAPPADOCIA, CILICIA, AND CRETE. (Vol. VI, p. 300.) *Kilikia* is the Greek form of the word. (See Greek New Testament Acts vi, 9, and elsewhere.) In Roman characters this is CILICIA, or (after 12th century when doted i came into use) Cilicia. Roman c = Greek k, and Roman i or i = Greek ι. In English, the rule, with many exceptions of course, is "c and g ar soft before e, i, y." Analogy with other words in our tung has caused Cilicia to be pronounced with c = s. To-day there is a tendency among scholars to spel words with k insted of c, so as not to mislead, as kelt, skeptic, Thukydes; and even where there is no danger of misleading, as Sanskrit, Sokrates, Kappadokia, etc.

[*Revised Speling*;—OMIT useles leters. CHANGE d to t, ph to f, gh to f, tch to tsh, if sounded so]. A. HAMILTON, Toronto, Ont.

RUSSIA LEATHER. (Vol. V, p. 56.) Russia leather is a soft kind of leather made in Russia, and having a peculiar odor from being impregnated with an oil obtained from birch bark. It is much used in book-binding, on account of its not being subject to mold, and being proof against insects, this quality being due to the effect of the empyreumatic oil used in dressing it.

MRS. L. T. GEORGE.

**MUGWUMP.** (Vol. II, pp. 455, 547, 560; IV, 232.) The word "mugwump" is not in the *Encyclopædia Britannica*, but is in the *American Supplement*, Vol. III, p. 783.

"The word belongs to the Algonquin dialect of the Indian language of North America, and is used by John Elliot in his translation of the bible (Cambridge, Mass., 1661) to translate the Hebrew word 'alluph,' a leader. Elliot used it in a sense of 'big chief' a term more comprehensive to the Indian mind than that which appears in the King James version 'duke.' The word was spelled 'mugquomp' in the singular, and 'mugquampoag' in the plural. It appears in many places throughout the Algonquin translation of the Old Testament, a notable place being in I Chronicles 1, 51-53; also, Genesis xxxvi, 15, given herewith :

'Young mugquampoag wunnaumonuh Esau; wunnaumonuh Eliphaz; montomegheunche Esau; mugquomp Teman; mugquomp Omar; mugquomp Zepho; mugquomp Kenaz.'

'These were dukes of the sons of Esau; the sons of Eliphaz; the first-born son of Esau; duke Teman, duke Omar, duke Zepho, duke Kenaz'

MRS. L. T. GEORGE.

**OLDEST BOOK EXTANT.** (Vol. VI, p. 316.) The oldest book extant is believed to be the "Book of the Precepts of Prince Ptahhotep," the oldest composition in existence. It is better known as the "Prisse Papyrus," and is preserved in the National Library of France at Paris. This book is of the age of Hssa Tatkeru, the last king but one of the fifth dynasty (Memphis) who flourished about 3750 B. C. The author Ptah-hotep, was a member of the royal family. It is a sort of handbook for young people, a treatise on practical morality, somewhat in the style and tone of the writings of Confucius. In some places the writings call to mind the wisdom of Solomon. Filial obedience is inculcated as the basis of all good order. There were probably other documents written in the hieratic characters of greater antiquity than the Prisse Papyrus, but this alone remains as the most important monument of that distant epoch.

F. M. C., Warner, N. H.

**TURNING TO THE RIGHT.** (Vol. V, p. 56.) It is stated that the Puritans in a spirit of defiance of English customs and manners, and for the purposes of alienating themselves from such home influences, introduced turning to the right, but retained the custom of sitting on the right.

MRS. L. T. GEORGE.



**THE MOST MYSTICAL LETTER IN THE ALPHABET.** (Vol. VI, p. 348.) F. V. Kenealy, in his "Book of God," p. 12, says that the letter M is a letter peculiarly sacred in all languages and all religions ; that it is a symbol of waves of water (MMM). M final, in the Eastern languages, means 600. It is the monogram of Maya, Mary, Minerva, Mercury, Manu, Messiah (divine wisdom), Metis (the word), Matrix, Mas (the male), Mater, Mamma, Mihr (commonly called Mithras), the Monad, Mystery, and an immense variety of words which bear those refined and subtle meanings familiar to every student in theology. All letters are mystic, says Kenealy, but M is preëminently so.

M final meaning 600, Dr Kenealy takes 600 years as the measure of the messianic appearings of his twelve messiahs. He gives four such periods (600 being called a Naros), equal to 2400 years, to the 24 ancients ("elders" in Rev. iv, 4, 10) who, he claims appeared prior to Adam. Then appeared 24 messiahs at intervals of 600 years as follows, making the present time about A. M. 9600 :

1 Adam-Oannes,	3000	7 Amosis, Moses,	6600
2 Enoch-Edris,	3600	8 Lao Tseu, Elijah,	7200
3 Fo, Buddha,	4200	8 Jesus-Christos,	7800
4 Brigoo,	4800	10 Mo'Armed,	8400
5 Zaratusht,	5400	11 Chenzig-Khan,	9000
6 Thoth-Hermes,	6000	12 Parasu-Rama,	9600

The last named is now supposed to be born in the flesh and in due time will in the order of things be made known to inhabitants of the earth, and a new order of things will then begin. The M final = 600 is only once used in the Hebrew Bible other than a final M, this single instance is in the word *Imrbe* found in those remarkable words of Isaiah (ix, 6 7). Cassini, Picus, Higgins, and others have examined these verses critically and believed a secret of the Naros was designed to be concealed in the word by the prophet. The question might well be asked, "Why have these twelve shining lights of new awakenings appeared at such regular intervals of 600 years—a Naros?"

Some student in nomenclature not long since announced a lecture on the "The Initial M in the Scriptures," proposing to develop its mysteries in such words as Melchizedek, Machpelah, Maccabees, Maher-shalal-hash-baz, Mazzaroth, Magog, Metatron, Michael, and many such like, over which there has been much discussion as to their true

meaning. Masonry also furnishes a field of re-*search* for the mystical. A lecture by Mrs. Cora L. V. Tappan, entitled "The Symbol of the Letter M," delivered in Chicago, in 1877, gives some singular information on this letter.

**THE DIMENSIONS OF HEAVEN.** (Vol II, p. 609.) After re-reading the article, "The reason why Father Adam ate the Apple," I am led to ask has any estimate been made of the dimensions of heaven?

CONSTANT.

We reply that there have been several estimates as to the size of the "many mansions." We take the following from Bombaugh's "Gleanings from the Harvest Fields of Literature," p. 291 :

"And he measured the city with the reed, twelve thousand furlongs. The length, and the breadth, and the height of it are equal." — Revelation XXI, 16.

"Twelve thousand furlongs, 7,920,000 feet, which being cubed is 496,793,088,000,000,000,000. Half of this we will reserve for the Throne of God and the Court of Heaven, and half the balance for streets, leaving a remainder of 124,198,272,000,000,000,000 cubic feet. Divide this by 4,096, the cubic feet in a room 16 feet square, and there will be 30,321,843,750,000,000 rooms.

We will now suppose the world always did and always will contain 990,000,000 inhabitants, and that a generation lasts for  $33\frac{1}{3}$  years, making in all 2,970,000,000 every century, and the world will stand 100,000 years, or 1,000 centuries, making in all 297,000,000,000 inhabitants. Then suppose there were worlds equal to this in number of inhabitants and duration of 100 years, making a grand total of 297,000,000,000,000 persons, and there then would be more than 100 rooms sixteen feet square for each person."

**THE NAME PYRAMID.** (Vol. VI, p. 300.) The etymology of the term *pyramid* is conjectural. Though supposed to be Egyptian, the Egyptian designation of these structures was *b'r-b'r*. But in the Coptic, *PI-RA-ME* signifies the high place of the sun, or Ra. The term *puramis* came into use in the Greek language as a designation of the Grecian structures, and also of geometric figures. The pointed cakes which were employed in the Bacchic worship were so named. It may have been from *pur*, pie; the structure denoting a flame, as the form is meant to express. The triangle standing on its base has that symbolic meaning, as denoting the occult fire which denotes life itself.

A. WILDER.

THE FOURTH DIMENSION. (Vol. IV, p. 327.) Why not carry out the series thus ?

	Point.	Line.	Square	Cube.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	Nth.
Point,	1	2	4	8	16	32	64	128	256	512	1024	2 <sup>nth</sup>
Line	0	1	4	12	32	80	192	448	1024	2304	5120	<i>x</i>
Square,	0	0	1	6	24	60	200	592	1632	4288	10880	<i>y</i>
Cube,	0	0	0	1	8	40	140	480	1552	4736	13760	<i>z</i>
4th,	0	0	0	0	1	10	60	260	1000	3552	11840	<i>m</i>
5th,	0	0	0	0	0	1	12	84	428	1958	7464	<i>p</i>
6th,	0	0	0	0	0	0	1	14	112	652	3260	<i>q</i>
7th,	0	0	0	0	0	0	0	1	16	144	940	<i>r</i>
8th,	0	0	0	0	0	0	0	0	1	18	180	<i>s</i>
9th,	0	0	0	0	0	0	0	0	0	1	20	<i>t</i>
10th,	0	0	0	0	0	0	0	0	0	0	1	<i>v</i>
Nth,	0	0	0	0	0	0	0	0	0	0	0	<i>w</i>

L. H. AYMÉ, Chicago, Ill.

THE WOODEN HORSE OF VIRGIL'S ÆNEID. (Vol. VI, p. 348.) An allusion to the wooden horse occurs in book iv, of the Odyssey (373-394). Prince Telemachus is at Sparta seeking tidings of his father Odysseus, and is entertained by kind Menelaus with personal reminiscences of the siege of Troy. The beautiful Helen is also a listener while her husband relates the following episode :

"What wondrous conduct in the chief appeared,  
When the vast fabric of the steed we reared !  
Some demon, anxious for the Trojan doom,  
Urged you with great Delophobus to come,  
To explore the fraud ; with guile opposed to guile.  
Slow pacing thrice around the insidious pile,  
Each noted leader's name you thrice invoke,  
Your accents varying as their spouses spoke !  
The pleasing sound each latent warrior warmed,  
But most Tydides' and my heart alarmed :  
To quit the steed we both impatient press,  
Threatening to answer from the dark recess.  
Unmoved the mind of Ithacus remained ;  
And the vain ardours of our love restrained :  
But Anticlus, unable to control,  
Spoke loud the language of his yearning soul ;  
Ulysses straight, with indignation fired,  
(For so the common care of Greece required),  
Firm to his lips the forceful hand applied,  
Till on his tongue the fluttering murmurs died.  
Meantime, Minerva, from the fraudulent horse,  
Back to the court of Priam bent her course."—*Odyssey*, iv, 373-394.

NASIK MAGIC SQUARES. (Vol. VI, pp. 312, 348.) We suppose that the inquirer refers to the work "nasik" in his question. This word was first applied to a certain property of magic squares by Rev. A. H. Frost, who resided at *Nasik*, India.

THOMAS TAYLOR'S EPITAPH. (Vol. VI, p. 348.) The epitaph of Thomas Taylor was written by himself, and is as follows :

Health, strength, and ease, and manhood's active age,  
Freely I gave to Plato's sacred page,  
With Truth's pure joy, with Fame my days were crown'd,  
Tho' Fortune adverse on my labours frowned.

POEM ENTITLED "SOMETIME." (Vol. VI, p. 268.) The poem entitled "Sometime" may be found complete in the *New Hampshire Journal*, Vol. VI, No. 22, 1886, and is as follows :

H. W. HERRICK.

*Sometime.*

BY MARY RILEY SMITH.

"What I do thou knowest not now, but thou shalt know hereafter."

Sometime, when all life's lessons have been learned,  
And sun and stars forevermore have set,  
The things which our weak judgment here have spurned,  
The things o'er which we grieved with lashes wet,  
Will flash before us, out of life's dark night,  
As stars shine more in deeper tints of blue,  
And we shall see how all God's plans were right,  
And how what seemed reproof was love most true.

And we shall see how, while we frown and sigh,  
God's plans go on as best for you and me;  
How, when we called, he heeded not our cry,  
Because his wisdom to the end could see;  
And even as prudent parents disallow  
Too much of sweet to craving babyhood,  
So God, perhaps, is keeping from us now,  
Life's sweetest things, because it seemeth good.

And if sometime, commingled with life's wine,  
We find the wormwood, and rebel and shrink,  
Be sure a wiser hand than yours or mine  
Pours out this portion for our lips to drink.  
And if some friend we love is lying low,  
When human kisses cannot reach his face,  
Oh, do not blame the loving Father so!  
But wear your sorrow with obedient grace.

And you shall shortly know that lengthened breath  
Is not the sweetest gift God sends his friend,  
And that sometime the sable pall of death  
Conceals the fairest bloom his love can send.  
If we could push aside the gates of life,  
And stand within and all God's workings see,  
We could interpret all this doubt and strife,  
And for each mystery would find a key.

But not to-day. Then be content poor heart!  
God's plans, like lilies, pure and white unfold.  
We must not tear the close-shut leaves apart;  
Time will reveal the hidden cups of gold.  
And if through patient toil we reach the land,  
Then many feet, with sandals loose, may rest,  
Then shall we know and clearly understand—  
I think that we shall say, "God knows the best."

## QUESTIONS.

—o—o—o—

1. Are there any well authenticated cases of hair having turned white in the space of a few hours, whether by terror or other emotion?

AYMÉ.

2. Who was the author of the following quotation, and where can it be found: "I, too, am of Arcadia."

AYMÉ.

[See a similar quotation in N. & A., Vol. II, p. 496, (g, 1.)]

3. Where do we first find the following expression used: "Nothing endures save Art."

AYMÉ.

4. How did the saying originate, "He has gotten the mitten"?

F. J. P., Concord, N. H.

5. Where and by whom was this phrase first used: "The eternal fitness of things."

JOHN G. T. CRUSE.

6. What is the origin of the expression, "Keeping bachelor's hall"?

L. M. O.

7. Is there a beardless race of people?

L. M. O.

8. What is the origin of "three cheers and a tiger"?

L. M. O.

9. Why is a person named John nicknamed *Jack*?

JOHN.

10. Why is *Jacobus* anglicized by James?

O. O.

11. In some of our former arithmetics, after illustrating the method of proofs by "casting out the nines," it says "the work is supposed to be right." Has the proof by the excess of nines ever failed to prove any example correct?

F. K. GOLDSMITH.

12. Joseph Justus Scaliger is reported to have said that he would rather have been the author of the Ode of Horace, addressed to Melpomene, than to be the king of Arragon. Gen. James Wolfe is reported to have said he would rather have been the author of Gray's "Elegy" than to have the honor of taking Quebec. Who is said to have made a similar remark in reference to Bryant's "Thanatopsis"?

SEARCHER.

13. What martyr replied to all the question asked him while at the stake, by saying, "I am a Christian"?

SEARCHER.

14. What rule are we to follow in anglicizing and pronouncing such Greek names as Xenophon (Zenophon), Zoroaster (Xoroaster), Zeno (Xeno), Xerxes (Zerxes or Xerxes), &c.?

XENOS.

15. Can you place these quotations for me?

M. N. R.

"World-losers and world-forsakers,  
On whom the pale moon gleams;  
Yet we are the movers and shakers  
Of the world forever it seems."

"A Christian is of brightness, not of night,  
A smiling Abel, not a frowning Cain."

"Live to thy neighbor, live unto thy God,  
Not to thyself alone."













MISCELLANEOUS.

# NOTES AND QUERIES,

WITH ANSWERS.

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"God hath spoken once ; two fold is what I heard." — THE QABBALAH.

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QUOTATION FROM COWPER AND HABAKKUK. "He that runs may read" is a quotation from the lines in William Cowper's *Triocinium, or a Review of Schools*, lines 79-82 :

"But truths on which depend our main concern,  
That 'tis our shame and misery to learn,  
Shine by the side of every path we tread,  
With such a luster, he that runs may read."

"He may run that reads" is a quotation from Habakkuk II, 2 :  
"Write the vision, and make it plain upon tables, that he may run that readeth it."

WORDS ENDING IN "DOUS." There has been found nine words ending in "dous" : Amphibodous, apodous, cephalodous, gasteropodous, gastropodous, hazardous, pteropodous, stupendous, and tremendous.

WORDS ENDING IN "CION." There has been found eight words ending in "cion" : Cesteacion, coercion, epenicion, internecion, ostracion, pernicion, scion, and suspicion. All are said to be found in Webster, with the exception of the first, which is in Worcester.

A CURIOUS THEORY. A correspondent of the *Northwestern Rail-roader*, says the *Age of Steel*, advances a curious theory for the increasing prevalence of floods and rain-storms. He says :

"There are over 30,000 locomotives in use in North America, and from estimates, from them alone over 55,000,000,000 cubic yards of vapor are sent into the atmosphere every week, to be returned in the form of rain, or over 7,000,000,000 cubic yards a day — quite enough to produce a good rain-fall every 24 hours. Estimating the number of other non-condensing engines in use as eight times the number of locomotives, the total vapor thus projected into the air every week in this country, amounts to more than 470,000,000,000 cubic yards."

## QUESTIONS and ANSWERS.



**LOUD - VOICED PERSONS.** (Vol. VI, pp. 284, 298, 347.) I have observed two answers thus far as to loud-voiced persons. I question whether the loudest-voiced man of whom we have a record was Stentor as sung by Homer (*Iliad* Bk v, 786-789). We have a record of two person anterior to Homer. We read in the Book of Jasher xxxviii, where Simeon and Levi fought against the twelve men of the city of Sarton, and that Levi beheaded one man with his own sword; and verse 41 of this chapter shows the sonorous strength of Simeon's voice :

“ And the sons of Jacob seeing that they could not prevail over them, Simeon gave a loud and tremendous shriek, and the eleven powerful men were stunned at the voice of Simeon's shrieking.”

In chapter xxxix, we have an account of the battle of the sons of Jacob with the inhabitants of the city of Gaash, the battle was both in the front and rear, and the men upon the wall were casting arrows and stones upon the sons of Jacob. Verse 19 says :

“ And Judah, seeing that the men of Gaash were getting too heavy for them, gave a most piercing and tremendous shriek and all the men of Gaash were terrified at the voice of Judah's cry, and men fell from the wall at *his* powerful shriek; and all those that were without and within the city were greatly afraid of their lives.”

**HUGONOTORUM STRAGES.** (Vol. VI, p. 332.) *Strages* signifies overthrow, destruction, and was a fitting term for the damnable massacre of St. Bartholomew, which made its perpetrators, participators and sympathizers perpetually infamous. A. WILDER.

**GREEK FIRE.** (Vol. V, p. 56.) Greek fire is a combustible composition which burns under water, the constituents of which are supposed to be asphalt, with nitre and sulphur. It was thrown from engines, and is said to have been invented by Callinicus, an engineer of Heliopolis, in Syria, in the 7th century, to destroy the Saracens' ships, which was effected by the general of the fleet of Constantine Pogonatus, and 30,000 men were killed. A so-called “Greek fire,” probably a solution of phosphorus in bi-sulphide of carbon, was employed at the seige of Charleston, S. C., in September, 1863.

MRS. L. T. GEORGE.

**HYPONOIA AND PAROUSIA.** (Vol. VI, p. 332.) One needs to see the book published anonymously in New York, to determine what the author meant by *hyponoia* and *parousia*. The two words are Greek and were used in the Mysteries. *Parousia*, or being present, was applied to denote the epiphany, or appearing of the forms of the gods in the initiatory rites ; and *hyponoia* denoted the under meaning, or interior sense of the second dramas, which were acted on these occasions. Both terms appear in the epistles ascribed to Paul. First Corinthians xv, 23, reads : "Christ the first-fruits, then they of Christ in his *parousia*." First Timothy vi, 4, should read : "He is inflated with arrogance, comprehending nothing, but having a morbid craving in regard to controversies, and wars of words, out of which come malignity, contention, calumnies, and *hyponoias*." A. WILDER.

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### Problem.

How many times can fifteen girls take a walk, in triple groups, no two walking together the second time ?

### SOLUTION.

The following columns give every possible combination, answering the conditions, the girls being represented by the digits in their order.

1	4	5	9	12	13	1	7	9	9	15	2
2	5	6	10	13	14	2	8	10	10	1	3
3	6	7	11	14	15	3	9	11	11	2	4
4	7	8	12	15	1	4	10	12	12	3	5
5	8	9	13	1	2	5	11	13	13	4	6
6	9	10	14	2	3	6	12	14	14	5	7
7	10	11	15	3	4	7	13	15	15	6	8
8	11	12				8	14	1			

	I	
1	6	11
2	7	12
3	8	13
4	9	14
5	10	15

Since there are 35 groups, and 5 of them embrace the whole number of girls. they can walk together according to the conditions, seven times. For convenience of arranging the fifteen girls, observe the following collection of groups. From the above combinations, first write those containing 1, then those containing 2, etc., omitting those

containing a number with it already written. Thus we may write :

1	4	5	5	8	9
1	12	15	5	11	13
1	2	13	5	7	14
1	7	9			
1	8	14	6	9	10
1	3	10	6	12	14
			6	8	15
2	5	6			
2	3	14	7	10	11
2	8	10	7	13	15
2	9	15			
2	4	11	8	11	12
3	6	7	9	12	13
3	4	15			
3	5	12	10	13	14
3	9	11			
			11	14	15

The first arrangement of the fifteen girls was formed above in the arrangement of the columns.

The following six arrangements of the groups are easily made from the last combinations. First head the six columns with the groups beginning with 1, then write beneath those beginning with 2, and so on, observing to have the same number but once in an arrangement.

II			III			IV		
1	4	5	1	12	15	1	2	13
2	3	14	2	5	6	3	6	7
7	13	15	3	9	11	4	10	12
6	9	10	4	7	8	5	8	9
8	11	12	10	13	14	11	14	15
V			VI			VII		
1	7	9	1	8	14	1	3	10
2	8	10	2	9	15	2	4	11
3	4	15	3	5	12	5	7	14
5	11	13	4	6	13	6	8	15
6	12	14	7	10	11	9	12	13

This is an old and interesting problem, and has appeared in several periodicals. We do not remember to have seen any simple solution ; only the result has usually been given. The above will enable any one to make the combinations with ease.

H. A. Wood, A. M., Hokoken, N. J.

**THE ALPHABET IN EZRA XXI, 7.** (Vol. I, p. 293.) It is stated on the page indicated that all the letters of the alphabet except J. are found in Ezra XXI, 7. This is true; and I am led to ask was this a design by the translators, or a mere happening? Are there other similar peculiar verses? HYSON.

We leave the first question for our correspondents to express themselves upon.

As to the second, we answer that there are others in the original Hebrew, that are peculiar in various ways, many of which have been noted in the volumes of NOTES AND QUERIES. Yet there are many yet to mention. In Genesis XLIX, 8-12 inclusive are the last words of Jacob to his fourth son Judah. The B'chai observes:

"In this section relating to Judah are to be found all the letters of the (Hebrew) alphabet except the letter *Zain* (and *Zain* means weapon), which shows all the battles which the kingdom of the House of David won, were not won by weapons, but in the name of God; and hence in the name of Judah are all the letters of Jehovah, besides the letter *Daleth* (Jod he vau daleth he = Jod he vau he + daleth). The *Daleth* being the *fourth* letter of the (Hebrew) alphabet, showeth that he was the *fourth* son of Jacob. Moreover, the kingdom of Judah is likened to the sun, as it is written: 'And his throne as the sun before me,' (Ps. LXXXIX, 36); for as the sun was created on the *fourth* day, so likewise was Judah the *fourth* son of Jacob; and as the sun when shining by day endeavors to shine more and more, so likewise will the kingdom of Judah endeavor to become ever greater." (See II Samuel III, 1.)

It is stated that in Genesis XVII, 5-6, and 15-16, that God inserted an *H* (he) in the name Abram and the same letter to the name Sarai; and the result was Isaac was soon after born. Both the Rashi and the B'chai relate the following in explanation to a like theory recorded in Genesis XXX, 1-13:

"Rachel said, 'There is the letter *He* in the name of Leah, but not in mine (the spelling of Rachel in Hebrew is without the letter *He*). This letter *He* occurs in the name Jehovah, and therefore Leah (having the same letter in her name) has children and I have none. I will give thee therefore my maid Bilhah, in whose name there are two *He's*; one *He* will have the effect of giving her children, and the other *He* will cause me to have children.'"

Kabbalists search for the occult meaning of the Hebrew alphabet and esoteric knowledge of the Scriptures. Some believe a very

arcane interpretation is interwoven in names. One cannot but notice the orthography of many names of Hebrew wives. For instance :

Noah and Noemah, and handmaid Sambeth,  
 Abraham and Sarah, and handmaid Hagar,  
 Abraham and Keturah,  
 Isaac and Rebekah, and handmaid Debora,  
 Jacob and Rachel, and handmaid Bilhah,  
 Jacob and Leah, and handmaid Zilpah.

Lamech and { Adah,  
                   { Zillah,  
 Shem and Salith,  
 Ham and Nahlah,  
 Japheth and Arisiva,  
 Ishmael and Asiah,  
 Lot and Iscah,  
 Nahor and Milcah,  
 Esau and { Judith,  
               { Bashmoth,  
 Judah and Alyath,  
 Simeon and { Dinah,  
                { Bunah,  
 Levi and Adinah,  
 Issachar and Aridah,  
 Dan and Aphlaleth,  
 Naphtali and Merimah,  
 Gad and Uzith,  
 Asher and { Ahonah,  
               { Hadurah,  
 Zebulon and Merushah,

Benjamin and { Mechalia,  
                   { Aribath,  
 (Reuben married Eliuram.)  
 Joseph and Asenath,  
 Poti-pherah and Dinah,  
 Potiphar and Zulica,  
 Chenephra and Bithia,  
 Amram and Jochebed,  
 Moses and Zipporah,  
 Aaron and Elisheba,  
 Joshua and Rahab,  
 Othniel and Achsah,  
 Elkanah and { Hannah,  
                   { Peninnah,  
 Job and Rahma,  
 Jesse and Nitzeneth  
                   { Maacah,  
 David and { Michal,  
               { Bath-Sheba,  
 Solomon and Naamah,  
 Zacharias and Elisabeth,

Noah's wife is known by many names. She was called Bath-Enos, daughter of Enos ; Rabbi Gedaliah says her name was Noemah ; Euty-chius says she was called Haical, daughter of Namus son of Enoch ; the Gnostics call her Noria ; some writers call her Tithœa, the nurse of men, as Eve was the mother of men ; but the Rabbins say she was Naamah, the sister of Tubal-cain. (See Bereschith Rabba, f. 22, col. 4.)

Moses was known by many names. Bathia the daughter of Pharaoh called him Moses because she drew him out of the water ; Jochebed his mother called him Jekuthiel, saying " I had hoped for him " ; Miriam his sister called him Jared because she descended after him in the water to know what his end would be ; Aaron his brother said his name was Abi Zanuch because his father left his mother ; Amram his father called him Chabar because he himself was again reunited to

Jochebed his wife ; Kehath ( Amram's father ) called him Abigdor because God repaired the breach of the house of Jacob ; Kehath's nurse called him Abi Socho because he was hidden three months in his tabernacle ; but all Israel called his name Shemaiah, because " in his days God heard their cries and rescued them from their oppressors."

Moses-Jekuthiel-Jared-Zanuch-Chabar-Abigdor-Socho-Shemaiah.

Solomon's first wife's name was Djarada daughter of King Nubara, but his favorite was Naamah, No. 2, daughter of the king of the Ammonites ; he also married Balkis queen of Sheba, and many others.

Many more names could be given, but these will suffice. While all these wives' name mentioned above are not found in the Bible, they are found in the Book of Jasher, the Talmud, and the Apocrypha.

**DUODENAL ARITHMETIC.** (Vol. VI, p. 263.) Duodenal arithmetic is probably the same as duodenary arithmetic, which is that system in which the local value of the figures increase in a twelve-fold proportion from right to left.

MRS. L. T. GEORGE.

Duodenal arithmetic has twelve for its base. The names of the character-figures in this system are as follows :

0 zero, 1 an, 2 do, 3 tre, 4 tor, 5 pat, 6 sex, 7 ben, 8 ott, 9 nev, 10 dis, 11 elv, 12 ton. Then the system goes on by regular combinations, 11 tonan, 12 tondo, 20 doton, 30 treton, 100 san, 200 dosan, 358 tresan-fortonott, 1000 tos, 1600 tosexan, 10000 dill.

A good elementary treatise of this system is given in " Elements of Mechanics," pp. 313-330, by John W. Nystrom, Philadelphia, 1875.

**NAME OF CALIFORNIA.** (Vol. VI. p. 236.) California is a name given by Cortes, in the year 1535, to the peninsular now called Lower or Old California, of which he was the discoverer. He probably took it from the old Spanish romance of " Esplandian," by Garcia Ordenez de Montalvo, which was first published in 1510. In this work the name is given to an imaginary island, " on the right hand of the Indies, very near to the Territorial Paradise," abounding in treasures of gold. The root of the word is perhaps the Spanish " califa," caliph, from the Arabic " khalala," to succeed, the caliphs being the acknowledged successors of Mohammed. In some old geographies California is laid down as an island.

MRS. L. T. GEORGE.



FIRST NAME OF AMERICA. (Vol. VI, p. 300.) Does your correspondent mean America after the last discovery? If not, we may give him such names as Atlantis, Fusang, and the like, to choose from. The name by which Columbus knew the region was *India*, and he was *pilato mayar de Indica*. Hence Peru and Mexico were long known as "the Indies." It may not be amiss, however, to add that the name *America* is itself American, and not a misnomer from the first name of Alberico Vesputio. It belonged to a range of mountains in Central America rich in gold, and signifies the most elevated. Naturally *America* was the first name which a gold-hunter would learn, and would be common in Europe. It first appeared on a map published in 1507 by a bookseller at *St. Die* (Vages), named Waltzemüller, or by affectation of Hellenic fame, Hylacomglas. Probably he adopted it as a man's name. This could be of a person with "Rabb. Talmud" "Mochus," and a few other personifications. In fine, the Americ mountains gave the continent its name. A. WILDER.

ROBERT B. THOMAS. (Vol. VI, p. 268.) Robert B. Thomas, the almanac-maker, gave the following account of his enterprise. He desired to do business on his own account, and after several fruitless endeavors, waited upon Isaiah Thomas, who, he states, was not a relative, asking to take some of his almanacs to sell again. Mr. Thomas replied that he did not let his almanacs go, except to those of the trade. Mr. R. B. Thomas then began the publication of his own series. This was late in the last century, and the almanac is published now. I have read through and through the old almanacs by both Isaiah and Robert. My grandfather, in Barre, Mass., was for many years a subscriber to the Massachusetts *Spy*. The papers were preserved in the family with scrupulous care till 1834. Reading matter was scarce and costly in those days; and a large family of us made very thorough work of those archaic journals. My mother told me that Isaiah Thomas borrowed from an uncle a Bible to use in his office, whether as "copy" or to correct "proof" with, she could not tell. Mr. Thomas in 1776 read the Declaration of Independence to an audience in Worcester; and in 1826 read it again the 4th of July. For several years Isaiah Thomas, Junior, published the *Spy*. My mother and her sister had each an octavo Bible of Mr. Thomas's printing; and their step-mother, a philosophy. In June, 1887, I rode

from Chicago to Jacksonville, Ill., by way of Peoria. Passing rapidly through a town I saw the name of Isaiah Thomas conspicuous on a building to the left. I was curious to know more about it but did not find out the name of the town even.

A. WILDER.

NEW ENGLAND ALMANACS. (Vol. VI, p. 268.) The following are some of the almanacs that have been published in New England, and now continued regularly, except the last named. There were many in the field during the last half of the last century and first half of the present century, and many of them of few years.

Daniel Robinson—Maine Farmers' Almanac, Hallowell, 1819-1883, Augusta, 1884-1889. Nos. 1-71. (Daniel Robinson, born April 8, 1777, died May 18, 1866, aged 89 years.)

Dudley Leavitt — Farmer's Almanack, Exeter, N. H., 1797-1823, Concord, 1824-1889. Nos. 1-93. (Dudley Leavitt born May 23, 1772, died Sept. 20, 1851, aged 80 years.)

Robert B[ailey] Thomas — Old Farmer's Almanack, Boston, Mass., 1793-1889. Nos. 1-97. Robert B. Thomas died May 19, 1846, age 80.

David A. Daboll—New England Almanac and Farmer's Friend, New London, Conn. 1773-1889, Nos. 1-117.

Isaiah Thomas — Massachusetts, Connecticut, Rhode Island, New Hampshire, and Vermont Almanack, Worcester, Mass., 1778-1802. (Isaiah Thomas, *Junior's*), 1804-18—. Isaiah Thomas died April 4, 1881, age 82.

GREATEST COLD ON RECORD. (Vol. VI, p. 252.) The greatest cold on record was at Jakontask, Liberia, January 25, 1829, when the thermometer marked 73° below zero. The extreme summer heat at Bengal and the African desert is 150° Fahrenheit.

MRS. L. T. GEORGE.

ROBBING PETER TO PAY PAUL. (Vol. VI, p. 252.) On the 17th of December, 1540, the abbey church of St. Peter at Westminster was advanced to the dignity of a cathedral by letters patent; but ten years later it was joined to the diocese of London again, and many of its estates appropriated to the repairs of St. Paul's cathedral.

*"Tanquam siguis crucifigeret Paulum ut redimeret Petrum."*

"It is not desirable to rob St. Peter's altar in order to build one to St. Paul."

MRS. L. T. GEORGE.

*Q U E S T I O N S .*

1. Who is the *one* referred to in the following, taken from Dr. F. V. Kenealy's work, "The Book of God—The Apocalypse of Adam-Oannes," p. 18 :

"The student who devotes himself to themes of this high nature, will do well to bear in mind the words of *one*, who was well capable of raising his sublime intellect to the most exalted purposes, but who was so misled by worldly shows that he sacrificed God and Heaven to the merest phantoms, and reaped what all such sowers reap, a life of sorrow, disappointment and disgrace." S. D. D.

2. What asterism is meant by *Tyshya*, in the following quotation :

"When the sun and moon and the lunar asterism Tyshyr and the planet Jupiter are in one mansion, the *Age of Purity* shall come."

3. Why are the Roman numerals IIII usually put upon dials for the 4th hour instead of IV ? JUNIOR.

4. Can any reader give any information relative to an old poem written on the occasion of one man selling a piece of land to another man and reserving the right "to raise one more crop"; and he sowed acorns to raise a crop of oaks, probably in revenge, or some freak ?

R.

5. When did the first emigrant ship leave England for any other country ? D. M. DRURY.

6. What country has the greatest variety of coins in circulation ? D. M. DRURY.

7. The assertion has very confidently been made by an intelligent gentleman that the well-known expression, "gone over to the majority," is incorrect, if it means to say that the dead of the earth outnumber the living. Can any reader cipher out an approximation in regard to this question ? G. R. A., Albany, N. Y.

8. My name is James Pharaoh Mann. How should it be put in the phonetic spelling, in superscriptions for instance, James Ph. Mann, or James F. Mann ? J. P. M.

9. What was the *name* of "The Village Blacksmith," celebrated in song by H. W. Longfellow ? ORLEANS.

10. Who is "Parallax," the author of the work entitled "Earth not a Globe," or what is known as Zetetic Astronomy ? ORLEANS.

11. Where does Carlyle say "The great lesson we all have to learn is obedience," or words to that effect ? A. W.

12. Where can a quite full catalogue of the published writings of Thomas Lake Harris be found ? AN ADMIRER.

13. Who is the person who writes and publishes under the name of *Sivārtha* or *Sidārtha* ? Who is his publisher ? HIERO.

*A Remarkable Vision*

}—{

Showing the sudden and surprising appearance, the celestial mein and heavenly conversation of the departed spirit of MR. YEAMANS, late student at Yale College, to and with MR. H. GOODWIN, his friend and class-mate ; tending to astonish, edify and instruct. "God speaketh once, yea twice, \* \* in a vision of the night." (Job xxxiii, 14-15). "I will meet thee at Philippi."—*Ghost of Brutus*. The second edition carefully revised and corrected by JAMES TREADWAY, who was personally acquainted with MR. YEAMANS, and MR. GOODWIN, and born in the same town with MR. YEAMANS.

The two persons mentioned in the following vision, I was acquainted with about three years in Yale College, in New Haven, Connecticut. MR. YEAMANS was born in Colchester, the same town that I was. He was a youth of an unblemished character, and very steady and religious, and his parents were wealthy and respectable. MR. GOODWIN also descended from respectable parents living in the town of Winterbury, in Connecticut, and appeared to be a very sober and pious youth, the three years that I was acquainted with him. He acquired a good degree of learning while at college, and by his good conduct merited a good reputation, and the honors of college. He was licensed to preach the gospel by ministers of respectable character of the congregational order ; and when he became a preacher, then it appeared more clear than before, that he loved God supremely ; and being sensible of the dangerous situation that mankind were in by nature, he seemed to long for their salvation ; and if I mistake not he was preaching on probation, when he was the subject of the following vision. I believe it is a fact that MR. GOODWIN was really awake, and his mind in regular order, when he beheld the appearance, and really heard such words proceeding from it ; so that it is not a fictitious thing ; but what the appearance really was I cannot say. I do not doubt but that it appeared to him, to be an exact representation to him of his class-mate MR. YEAMANS, both in his looks and voice. Let the words of the vision be spoken by whom they will, they are all real and important truths, and ought to be received and embraced as such.

Connecticut, April 4, 1795.

· JAMES TREADWAY.

TO THE READER : A short time before his death, MR. GOODWIN wrote the following epitaph for himself :

"How short, how precarious, how uncertain is life ! How quick the transition from time to eternity ! How soon the thread of life is spun ! A breath, a gasp, a groan or two, and we are seen no more ! Yet on this brittle thread (alarming thought ! ) hang a vast eternity !"

Died January, 1767, Æt. 27.

## THE REMARKABLE VISION.

In the night of the 25th of May, in the year 1764, about the hour of twelve, as I lay meditating in my bed on various subjects, I was suddenly alarmed by the opening of my chamber door; thither turning my eyes, to my great surprise and wonder, I beheld the appearance of my former friend and companion, MR. YEAMANS by name, who had been dead to the best of my remembrance about the space of four years, coming in at the door. His person seemed to be celestial and angelic, his countenance lustrous and shining, his garments white and dazzling, starred with glittering gold, with a crown of unsullied gold upon his head; his motion was slow and deliberate, and gesture pleasing and graceful, and in this heavenly pomp and splendor he came near to my bedside. "In the name of Almighty God, I demand of thee," said I, "on what important errand art thou come!" He replied, with a smiling countenance, "In the name of that Mighty God by whom you abjure me, I am come, not to terrify you with new revelations, but to renew our former acquaintance and conversation; to discourse on the great and important realities of the eternal world, and the happiness and glories of the heavenly state. Therefore, be not afraid. In heaven we enjoy the most perfect freedom and communion with the blessed God; there faith is followed in vision, and hope in fruition. There, the spirits of just men made perfect join the innumerable company of angels and archangels in singing anthems and doxologies of eternal praise to God and Christ, our exalted redeemer; there we are crowned with crowns of eternal honor, and decked with robes of brightest luster, forever shining forth like so many suns in the kingdom of our heavenly Father. Oh the glories! the ravishing glories of the heavenly world! Oh those blessed scenes of permanent and everlasting joy and delight! Here all tears are wiped away from our eyes; here we are entirely delivered from the molestations of the old serpent. There is nothing enters these peaceful regions that defileth, or that worketh abomination, or maketh a lie. There is not one spot or stain in the walls of the new Jerusalem. Not one sullied pillar in the upper temple of God. Not one jarring note in all the heavenly concert. Not one slumbering string, nor untuned harp is to be found there. Oh, sir, could your ears be unstopped, and the curtains of your eyes drawn, that the ravishing delights and entertainments of the heavenly world might at once pour their blended blaze on your astonished sight! Could you hear the loud hallelujahs that ring through the arches of heaven; the hosannas that proceed from every tongue, and the name, the blessed name of Jesus sweetly breathed in every accent. How your soul would leap in you for joy! How you would long, ardently long, to take wings and be gone hence, and be with Christ, which is far better. How you would long to be absent from the body, that you might be present with the Lord. Be-

lieve me, sir, one moment, the happiness of heaven will more, infinitely more, than counter-balance all the riches, pleasures, or profits of this world. O the folly, the egregious folly, of silly mortals, who make the world their wonder, their gold, and their God ; and their coffers their heaven. Can immensity be measured with a line ? or an atom weigh down the boundless creation ? As well may earthly pleasures yield satisfaction to an immortal mind. All the views and discoveries which you have here of the heavenly state, are but as through a glass darkly ; but in heaven it is face to face, and there we know as we are known. Do not you remember, my dear friend, one night as we lodged together in a certain chamber, at the school of the prophets, the agreeable and delightful topic of our conversation was the glories and employments of the heavenly state ? This was introduced, you doubtless remember, by a question I asked, namely, 'What St. Paul was doing in heaven ?' Your reply was, 'If sorrow or tears there could be in heaven, I should think he would be weeping, not only over the churches to which he wrote, but also over apostatizing Britain and back-sliding New England ; yea, and not only so, but he would wash this seat of the muses with a flood of tears.' This naturally turned our conversation upon the employment of saints and angels in heaven. But O how narrow were our views ! How faint were our ideas ! How feeble and glimmering were all our discoveries of the great and glorious things God had prepared for them that love him ! Mortals are apt to start at the sound of death, and the more thoughtful of them go weeping to the grave. But no tongue can express the inconceivable joy I am the subject of. When I look into the grave, and behold my body rotting there, I know that by and by he who has the keys of death and hell, will unlock the prison of the grave. Then shall my body spring from the dust, fashioned like the glorious body of the Son of God, for which time I ardently long. Then shall my joy be complete. Yet a little while, and he that shall come, will come, and will not tarry, and I know that his reward is with him. He is at the door. Even so, come Lord Jesus. Come quickly."

Here he made a pause ; when, being astonished at his heavenly language, I inadvertently replied, "You say the hour is at hand. When then shall the judgment be ?" He replied with a stern aspect, "Hast thou never read the Bible ? Is it not there said, 'Of that day and hour knoweth no man ; no, not the angels of heaven ; but my Father only ?' I will therefore address you in the language of Christ : Watch, therefore, for ye know not in what hour your Lord cometh, whether at even, or at midnight, or at the cock-crowing, or in the morning ; lest, coming suddenly, he find you sleeping."

"True," said I, "may the Lord enable me thus to do. But are you indeed in heaven ?" He replied, "Is this the habit of hell ?"

"Nay," said I, "but Satan can transform himself into an Angel of Light." "True," said he, "but where is his love? If I instruct you in any thing contrary to what Christ and his apostles taught, then judge me accursed. No, sir, I am now surrounded with the heavenly host, though they are concealed." Then he broke out in the highest strains and raptures of joy: "Hallelujah, hallelujah? Blessing, and honor, and power, and glory be to him that sitteth upon the throne, and to the lamb for ever and ever, who hath redeemed me to God by his blood. Who hath brought me up out of the horrible pit; out of the miry clay. Who hath established my goings, and put a new song into my mouth, even praise to the Lord! Hallelujah. Glory! Glory to God in the highest. That I have joy in heaven, joy unspeakable and full of glory." "Do not you," said he, "see this crown of unsullied gold upon my head? these garments of burnished gold pure and white? I have a crown incorruptible in the heavens; a crown of glory which can never fade away; a kingdom which can never be moved."

"O thou subject of eternal glory," said I, "happy indeed art thou. When shall I be partaker of the same joy? When shall it be?"

"For this," said he, "you must earnestly watch and pray, and wait the good pleasure of God, until the blessed moment shall come."

"Let me embrace you," said I, "my dearest companion." Said he, "Is not my body in the dust? Hath a spirit flesh and bones? I must deliver you my message and begone. Search the Scriptures; in them think you you have eternal life. They are able to make you wise unto salvation. I am not come to deliver you things that have not been told; to confirm to you the reality and divinity of God's word; for if you believe not Moses and the prophets, neither would you believe though one should rise from the dead. Make the word of God the rule of your life; the standard and directory of all your conduct. Yield not to the false insinuations and vain amusements of a delusory world, for they will lead to the snares of death. But pursue the dictates of reasons and the oracles of everlasting truth. Bonds and afflictions may abide with you on earth. Let not these things move you; but see to it that you have a testimony of a good conscience, that in simplicity and godly sincerity, not by fleshly wisdom, but by the grace of God you have your conversation in the world. For if God be for you who can be against you. Account not the sufferings of time worthy to be compared with that glory which shall hereafter be obtained by the godly and pious. Account all things but loss for the excellency of Christ Jesus, and that you may be found in him at last, not having on your own righteousness, which is of the law, but that which is of God by faith. Study truth and honesty, and as far as in you lies, live peaceably with all men. Place not your hope in uncertain riches, for they will take to themselves wings and fly away. Realize the truth you inculcated in your last



sermon, that you must die. Live as if you expected every moment would be your last. Observe the words of your text, 'It is appointed unto men once to die, but after this the judgment.' Your thoughts were just, when you said, 'Who would regret the loss of a stiver, when in pursuit of a crown ? or a cottage, when about to obtain a kingdom ? That there is no more proportion between the pleasures of this life and those of godliness, than there is between a feather and a mountain of gold.' Give up your whole soul to God and the interest of religion, and let your will be swallowed up in the will of the Most High. You have begun a good work, you have entered upon the gospel ministry. I congratulate you upon your noble undertaking. May you prosecute the work, and see to your abundant joy and rejoicing, the pleasure of the Lord prosper in your hands."

Here I interrupted him, and said, "If this be the will of the Lord, whence then this weakness of the eyes, as well as the want of other qualifications ? Who is sufficient for these things ?" "It is not," said he, "for us to pry into the eternal counsels of God ; His grace is sufficient for you, and his strength may be made manifest in your weakness. The preaching of the gospel is the most noble employment of life ; and if your judgment be with the Lord, and your work with your God, you shall not only shine as the brightness of the firmament, but as the stars forever and ever. See, therefore, that you preach Christ Jesus, and him crucified ; and be filled with the blessing of the gospel of peace. Appear valiant in the cause of God ; and fear not what men shall say or do unto you. How do the ways of Zion mourn, because of the few travelers that walk therein ? How doth the virgin daughter of the Lord's people sit solitary, none to comfort her under all her afflictions. O ye protestant powers ! though your doctrines in general are good, yet, how have you swerved from your profession by unhallowed and unsanctified lives ? Repent and do your first work, or God will come unto you quickly and remove your candlestick out of its place. My dear friend," continued he, "now you are in the bloom of youth, exert your influence with your co-workers ; for your observation was true, 'That the habits of sin will grow stronger and stronger.' Yet I must blame you for not prosecuting your advice to youth still further than you did. For it is a matter of the utmost consequence. Youth is the most favorable and advantageous season in which to devote ourselves to God. O the follies and vanities of youth ! Do they imagine they shall never die ? Let them think on me. Where is my body now ? And where may theirs soon be ? Let me remind you of another phrase of yours. 'Should I speak unto you from the bottom of the tombs, saying, I have gone before ; my days are numbered and finished, and you shall soon be with me ; would you not regard it ?' But, sir, I must bid you adieu. May you go on and prosper, serve God, and your generation faithfully, by the will of the Most High ; then fall asleep in Jesus, and



your spirit take wings to the mansions of eternal glory, to join the innumerable company, and multitude of angels and spirits of just men made perfect, in celebrating the praises of electing love, and redeeming grace forever and ever."

He then closed his hands and cast his eyes to heaven and said: "O thou Almighty Sovereign of the universe, thou Lord of angels and men! look down on earth and support the dying cause of the world. Hasten, blessed Jehovah! hasten the happy time when thy gospel shall run and thou be glorified from sea to sea, and from the river to the end of the earth. O thou Mighty Immanuel, thou Prince and Saviour of the world, ride through the earth in triumph, conquering and to conquer. Bring in thine elect from the four winds, that Zion may become a praise and a glory in the face of all the earth." He then with a low and gentle bow, said, "Sir, I hope ere long to meet you in heaven, where we shall spend an eternity in the blessed company and society of each other; and swim in those rivers of pleasure, which issue from the throne of God, and flow at his right hand forever more. Farewell." He then turned about and departed out of my chamber, and was seen no more.

[This vision is reprinted by request from the second edition of a now very rare copy of the remarkable vision printed at Amherst, N. H., nearly one hundred years ago.]

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**CORRECT NAMES OF SOME AUTHORS.** Here are a few interesting points of information as to the names of literary men:

Wilkie Collins is really William Wilkie Collins.

Austin Dobson was baptized as Henry Asstin Dobson.

Muurice Thompson ten years ago was James Maurice Thompson.

Brander Matthews's whole name is James Brander Matthews.

Laurence Hutton's whole name is James Laurence Hutton.

Henry Rider Haggard is the full name of the author of sensational novels.

Slason Thompson, editor of *America*, has within ten years dropped his first name, Alexander.

Joaquin Miller is really Cincinnatus Heine Miller.

Edmund William Goose and Edgar William Nye would scarcely be identified by their real names.

Julian Hawthorne has not for twelve years used his historic middle name Crowninshield.

Francis Richard Stockton is now known as Frank Stockton.

Charles Egbert Craddock is Miss Murfree.

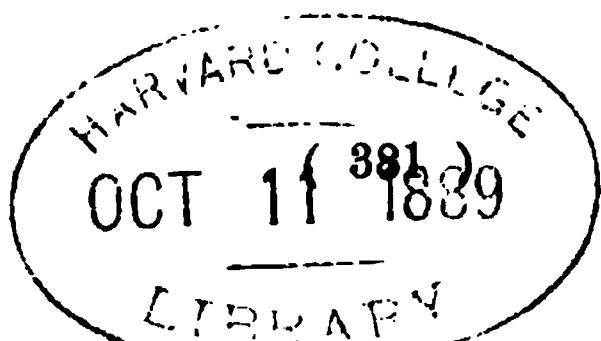
Bayard Taylor's first name was James.—*Chicago News*.











MISCELLANEOUS

# NOTES AND QUERIES,

WITH ANSWERS.

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*"Who knows not Circe, the daughter of the Sun?"*—MILTON.

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**NEW (OLD) WORDS.** A student at a public examination read a singular verbose paper on "the parts of speech," claiming that it was proper and correct to turn all proper names into adjectives, as Skakespearean, Baconian, Andrusian, Websterian, etc., but proper names can also be used adverbially, as Socratically, Demosthenically, Byronically, etc., and said such were sanctioned by good usage, referring to Hermes. What Hermes does he mean? A LISTENER.

Undoubtedly the student referred to the grammar of John Harris, as he shows that such license may be taken in the use of words; Mr. Harris even examples the two words, "Socratically," "Demosthenically," (and also, "Cyclopically" citing it from Aristotle), page 73. There are several works entitled "Hermes":

"Hermes; or A Philosophical Inquiry concerning Universal Grammar." By John Harris. Three books in one. 8vo. pp. 152. London, 1816.

"Hermes Scythicus; or, The Radical Affinities of the Greek and Latin Languages to the Gothic, illustrated from the Moseo-Gothic, Anglo-Saxon, Francic, Alemannic, Suio-Gothic, Islandic, etc. To which is prefixed a Dissertation on the Historical Proofs of the Scythian Origin of the Greeks." By John Jamieson. 8vo. pp. 368+xiv. Edinburgh, 1814.

"The Pastor of Hermas." Also called his Visions. One of the books in the Apocryphal New Testament, containing three divisions—Visions, 4 chapters; Commands, 12 chapters; Similitudes, 10 chapters. Two opinions prevail as to its authorship; one is that it was Hermas mentioned in Romans xvi, 14; the other is that it is the production of Hermas, brother of Bishop Pius of Rome.

Hermes Trismegistus ("thrice-greatest.") "The Divine Pymander." Several translations of this work have been made. (See N. AND Q., Vol V, p. 44. March, 1888.)

### *A Curious Property of Prime Numbers.*

(By T. S. Barrett, London, Eng.)

—0—0—

There is a remarkable property of all prime numbers (excepting 1 and 2) not possessed by other numbers. To explain, it will need a few introductory words.

*																									
I	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
I		2		3		4		5		6		7		8		9		10		11		12		13	
I			2			3			4			5			6			7			8			9	
I				2				3				4				5				6				7	
I					2					3					4					5					
r						2						3						4						5	
I							2							3							4				
1								2								3									

Write down, as in the top row, contiguously, as many consecutive numbers as may be desired, commencing with unity. Repeat them in the next row, with one vacant cell between each; in the third row, with two vacant cells between each; and so on *ad libitum*. If we now imagine some object (a chess-man, for example) to start from the corner cell at the top marked with a star, and to travel along any of the paths indicated by the figures, it will be seen that each path is distinct and well defined. If it travels downward along the cells occupied by 1, the path is a column. If it goes from 2 to 2, the route is a diagonal. If it jumps to a 3 in the top row, thence to the three in the next row, and so on, the path is a "knight's move." Similarly with the other numbers. We may distinguish the different paths by calling them No. 1 path, No. 2 path, No. 3 path, and so on.

Now if we select any prime number, and strike out from the diagram all numbers greater, and divide the whole perpendicularly into sections, each containing as many columns as numbers chosen, the various sections may be superimposed without confusion,—every num-

ber in the outside sections falling into an empty cell, excepting when the number of the row corresponds to the prime number selected, or any of its multiples. To make this clearer, let us take the number 7, and cancel all numbers greater. Then our first section will be up to and including the column with 7 at the top ; the next will be from the column, previously with 8 at the top, up to and including the column that was headed by 14. And so on.

{	1	2	3	4	5	6	7	}
{	1	5	2	6	3	7	4	}
{	1	6	4	2	7	5	3	}
{	1	3	5	7	2	4	6	}
{	1	4	7	3	6	2	5	}
{	1	7	6	5	4	3	2	}
{	†							}
{	1	2	3	4	5	6	7	}

The above is the arrangement in the first section of all the outside numbers greater than 7. I have supposed that the diagram has been continued far enough to fill the above ; but the principle is just the same. Thus the 5 in the second row of the first diagram being in the second column of the second section, must be transferred to the corresponding cell of the first section. It falls into the vacant place between the 1 and the 2. The 6 in the same row falls for the same reason, into the vacant place between the 2 and 3. Similarly with the third row. The 4 being in the third column of the second section,



has to be transferred to the corresponding cell, and falls into the vacant place just before the 2 in the third row. Similarly with the 5. The 6 in the same row is in the second column of the third section, and therefore falls into the vacant cell between the 1 and the 4. In the same way with all the other rows, until we come to the seventh, which corresponds with the chosen prime number. Then the numbers in that row instead of falling into vacant places, all crowd into the cell we have indicated by a dagger. After that the rows are repetitions of what has been given above ; the first and eighth being alike, and so on.

Many curious things may be observed in the above diagram ; and all others made similarly from other prime numbers. If we obliterate the column with 1 in it, and also the dagger row and all beneath it, we have remaining a very curious square ; these are among its other properties : all numbers equally distant from the center, both in rows and columns, add the same, namely, 9 (or the prime number plus 2). Every column and every row contains all the numbers from 2 to 7 ; and the diagonals consist only of 2 and 7. Now, if we have any square consisting of cells, the root being a prime number, we may deduce from the foregoing facts one having a bearing on magic squares with odd roots. If we cancel the last row of the second diagram, as well as all the numbers in it, we get an empty square remaining, which we may proceed to refill with the figures in another way. We may proceed from the cell marked with a dagger and completely fill the square with figures along different paths, without any collision. Thus, we may fill the lowest row by proceeding in a horizontal direction. Let us fill it with ciphers and call it the "zero path." We may proceed in an upward direction and fill the first column. This will be the No. 1 path. Diagonally we may proceed along the cells occupied by the figure 7. This is No. 2 path. Then we may fill in along the No. 3 (on the "knight's") path. We may put a 3 (for example) along this path, and it will occupy the cells where the 6 was ; and so on. The root of the square being 7, we may thus fill the square with figures along 8 different roots, always 1 more than the root of the square. It must be observed that when a path runs off at the right side of the square, before the top row has been reached, the figure must be brought back within the square, in a similar manner to that already explained when superimposing the sections of the first diagram.

Thus, take the figure 6 in the first diagram, the figure at the end of the fourth row. The path taken by that number being No. 3, it would bring us, if there were more cells to the right, into the second cell of the fourth row. Hence the next cell to be filled must be the corresponding cell inside the square.

Now, many writers on magic squares, especially M. de La Hire, must have had an idea of these properties ; but the credit of the discovery is generally conceded to the Rev. A. H. Frost of Nasik, in India. He pointed out that M. de La Hire's method of making odd-root magic squares necessarily follows from these properties of the "paths."

A.					B.				
1	2	3	4	5	10	20	30	40	50
3	4	5	1	2	40	50	10	20	30
5	1	2	3	4	20	30	40	50	10
2	3	4	5	1	50	10	20	30	40
4	5	1	2	3	30	40	50	10	20

Thus, in the square A, all the numbers are in No. 3, or the "knight's" path. Take the 4 in the bottom row, and thence to 4 in the row above, and so on. The 2 and 3 run off at the side, and are brought back within the square. Now the square B, on the other hand, has its numbers connected by the "No 4. path." Notice from 40 to 40 for instance. Consequently the differences between the numbers in square B, being *not less* than 5, a magic square is necessarily produced. For we have already seen that where prime numbers are concerned, the different "paths" never clash except in one spot. Therefore, one square being in "No. 3," and the other in "No. 4 path," any two numbers once united will never meet again in the same square. Thus, for example, the 3 in the one square and the 20 in the other meet on superposition once and once only. If they met oftener, or not at all, the combined square would not be magic. There is another property of these "nasik" magic squares, whose roots are prime numbers.

The magic summation may be counted along any "path," excepting those two paths chosen for the primary squares. The square of 5 can only have 6 paths, namely, the horizontal row, the perpendicular column, two diagonal or slanting rows in opposite directions, No. 3, and No. 4 paths. But as the two latter have to be chosen in a root-5 square, for the primary squares, the magic square of 5 cannot have its summation in any route excepting rows, columns, and diagonals. But in the square of 7 below, which may have two more paths than the 5 square, summation may be made along two additional ways.

11	22	33	44	55	66	77
56	67	71	12	23	34	45
24	35	46	57	61	72	13
62	73	14	25	36	47	51
37	41	52	63	74	15	26
75	16	27	31	42	53	64
43	54	65	76	17	21	32

(By the bye, there is a curious feature in this square not often met with, following from the way I have made it. If every number has its figures (*e. g.* 14 changed into 41, 32 into 23, and so on), the square remains magic.)

The above magic square not only sums 308 in the usual ways, but if the numbers according to No. 3 path (or "knight's move") be taken, likewise those along No. 4 path, they will likewise sum 308. But care must be taken that in making these moves that no row is

passed over, and that we move from left to right. Thus if we start from 76 in the middle of the last row, we may proceed to 53, then to 57, then to 14, and so on. But if we go to 74, or to 16 (both knight's moves), we shall not get the magic summation 308.

Thus,  $76+53+37+14+61+45+22=308.$

But,  $76+74+72+77+75+73+71=518.$

And,  $76+16+26+36+46+56+66=316.$

Starting at any other number at random will give the magic summation, if the "knight's move" is correctly taken. \* Similarly, with No. 4 path, proceeding from left to right, without passing over any row ‡. Another property of all these "nasik" squares is one I have already explained in the memorandum on the 20-root square, namely, the property I called "diagonally-nasik." A property of all diagonally-nasik squares is that the first column may be taken from its place and put after all the others (and vice versa), without destroying the magic properties. Similarly, the top row may be removed to the bottom (and vice versa); and a great many changes made in the arrangement of the numbers thereby, without destroying the magicity.

"Oddly-even" magic squares can never be made *nasik*, nor even diagonally-nasik; and "evenly-even" squares, and those whose roots are multiples of 3, can be made the latter only. With care nasik squares may be made when the root is a product of prime numbers, provided 3 is not one of the factors.

\* Thus,  $43+27+74+51+35+12+66=308$   
 $54+31+15+62+46+23+77=308$   
 $65+42+26+73+57+34+11=308$   
 $17+64+41+25+72+56+33=308$   
 $21+75+52+36+13+67+44=308$

‡ Thus,  $43+31+26+14+72+67+55=308$   
 $54+42+37+25+13+71+66=308$   
 $65+53+41+36+24+12+77=308$   
 $76+64+52+47+35+23+11=308$   
 $17+75+63+51+46+34+22=308$   
 $21+16+74+62+57+45+33=308$   
 $32+27+15+73+61+56+44=308$

## *Questions and Answers.*

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**THE DELUGE.** (Vol. VI, p. 284.) The deluge was threatened in the year of the world 1536; and began Dec. 7, 1656, and continued 377 days (Gen. VI to VIII). The ark rested on Mount Ararat May 6, 1657; and Noah left the ark December 18, following. The following are the epochs of the deluge, according to Dr. Hales :

Septuagint,	B. C. 3246	Clinton,	B. C. 2482
Jackson,	3170	Playfair,	2352
Hales,	3155	Usher and Eng. Bible,	2348
Josephus,	3146	Marsham,	2344
Persian,	3103	Petavius,	2329
Hindoo,	3102	Strauchius,	2193
Samaritan,	2999	Hebrew,	2288
Howard,	2698	Vulgar Jewish,	2104

In the reign of Ogyges, king of Attica, B. C. 1764, a deluge so inundated Attica, that it lay wasted for nearly 200 years. This is the account according to Blair.

Buffum thinks that the Hebrew and Grecian deluges were the same, and arose from the Atlantic and Bosphorus bursting into the valley of the Mediterranean. The deluge of Ducalion, in Thessaly, is placed B. C. 1503, according to Eusebius. It was often confounded by the ancients with the general flood; but considered to be merely a local inundation occasioned by the overflowing of the river Peneius, whose course was stopped by an earthquake between the mounts Olympus and Ossa. Ducalion, who then reigned in Thessaly, with his wife Pyrrha, and some of their subjects, are stated to have saved themselves by climbing up Mount Parnassus.

A general deluge was predicted in 1524, and arks were built; but the season happened to be a fine and dry one.

MRS. L. T. GEORGE.

**MASCOT.** (Vol. V, p. 86; VI, 314.) Mascot or mascotte is a diminutive form of masca, which may be originally Arabic, German, or Latin. The word "masca," meaning witch, occurs as early as 643 in the laws of the Lombards. "La masque" means witch in French, and in Persian-French mascotte, probably borrowed from the provençal, means anything which a superstitious player thinks is lucky. It

may be a cent with a hole in it, or a button. It may be contact with a lame man. The word reached this country with the opera where the leading character is a mascot — a child of luck — and now every base-ball club has its mascot, which may be a cat, a dog, or a boy.

From the original meaning of witch, to the secondary meaning of being favored by fortune or possessing certain luck-giving qualities, the change is simple.

Mrs. L. T. GEORGE.

MARRIED WOMEN TAKE THEIR HUSBAND'S SURNAMES. (Vol. V, p. 96.) This was a Roman custom. Thus Julia, Octavia, etc., married to Pompey, Cicero, etc., would be called Julia of Pompey, Octavia of Cicero. Our married women sign their names in the same manner, but omit the " of."

Mrs. L. T. GEORGE.

PURPLE, AN IMPERIAL COLOR. (Vol. V, p. 96.) Purple, a mixed tinge of scarlet and blue, discovered at Tyer. It is said to have been found by a dog having by chance eaten a shell-fish called *murex*, or *purpura*. Upon returning to his master, Hurcules Tyrius, he observed his lips tinged, and made use of the discovery. Purple was anciently used by the princes and great men for their garments. It was restricted to the emperor, by Justinian (1, 552), and *porphyrogenitus* attached to the names of some emperors signifies "born to the purple." The claim of Demetrius to the vacant throne was justified by the trite and flimsy sophism, that he was born to the purple, and the eldest son of his father's reign. This account is from Gibbon. Hence, imperial, royal; so called from the color having been a distinguishing token of imperial authority.

Mrs. L. T. GEORGE.

SEVEN GOLDEN CITIES. (Vol. V, p. 96.) They are situated on an imaginary island, and were the subject of one of the popular traditions concerning the ocean, which was current in the time of Columbus. The island is represented as abounding in gold, with magnificent houses and temples, and high towers that shone at a distance. The legend relates that at the time of the conquest of Spain and Portugal by the Moors, when the inhabitants fled in every direction to escape from slavery, seven bishops, followed by a great number of people, took shipping, and abandoned themselves to their fate upon the high seas. After tossing about for some time, they landed upon an unknown island in the midst of the ocean. Here the bishops burned the ships to prevent the desertion of their followers, and

founded seven cities. This mysterious island is said to have been visited at different times by navigators who, however, were never permitted to return.

MRS. L. T. GEORGE.

THE FIFTEEN O PRAYERS. (Vol. VI, p. 300.) "The Fifteen O's" are fifteen prayers beginning with the letter O, meaning Our Lady. The Virgin Mary is so called in some old Roman rituals, from the ejaculations at the beginning of the seven anthems preceding the "Magnificat," as "O when will the day arrive?" "O when shall I see?" "O when?" and so on. (See "Horæ Beatissimæ Virginis Mariæ.")

MRS. L. T. GEORGE.

According to the work of Daniel Smith entitled "Cuneorum Clavis, The Primitive Alphabet and Language of the Ancient Ones of Earth," page 13, during the excavations at Nineveh or Nimroud, and Kouyunjik, the excavators came across what they called a "Royal Library," a chamber filled with small clay tablets about 9x6 inches and under. These are now in the Kouyunjik museum. The fifth tablet in the second glass case on the right contains a list of phrases or short prayers arranged precisely with the same letters and in the same order, and what is very remarkable, the first fifteen phrases are short prayers beginning with O in the translation, just as we have our Hebrew copy of the 119th Psalm, eight verses beginning with A (aleph), eight with B (beth), eight with G (gimel), and so on through the Hebrew alphabet. The prayers are deeply interesting, showing us plainly that the Assyrians were not such idolaters as they are generally represented, but that they had not only a knowledge of the true God, but also that they had an earnest desire to know more of him. Take the two following prayers as examples :

"O ! that I could adopt some method of explaining the apparent changes, the mysterious movements of the true God, and the purport of those mutations."

"O ! it is my desire to embrace the beauty of the true God, and not break entirely with the obligations of the people."

Such is the sense elicited, not by 300 letters and 500 variants ; not by the cumbrous machinery of homophones, polyphones, determinatives, and ideographs ; but by the simple application of nineteen letters. All can be now read ; and as Solomon said, that "*there is no new thing* under the sun," so the original of Caxton's original in the

British Museum, is written upon clay between three and four thousand years anterior to Caxton.

The author gives a specimen of the English orthography A. D. 1349, or 540 years ago, and says he questions whether the Hebrew language had undergone such a change up to A. D. 1, as our English language has undergone up to this time.

His specimen is from Matthew vi, 6-8 :

" But whenne thou schalt preye, enter into thi couche and whenne the dore is schet, preye thi fadir in hidils, and thi fadir that seeth in hidils, schal zelde to the.

" But in preying nyle zee speke mycbe, as he:hene men doon, for thei gessen that thei ben herd in her myche speche.

" Therefor nyle ze be maad lich to hem, for zour fadir woot what is nede to zou, bifore that ze axen him."

WORD JEHOVAH OR YAHVA. (Vol. I, p. 282 ; V, p. 152.) Why is the word Jehovah, said to be omnific, incommunicable, unpronounceable, unutterable, etc., and where is it so stated in the Bible ? OSMON.

The " incommunicable name " is mentioned, as such, in the Bible (in the Apocrypha) Wisdom xiv, 21. and is alluded to in various other places (Ex. vi, 3 ; Ps. LXXXIII, 18 ; Is. xii, 2 ; xxvi, 4). Several times hyphened in Hebrew (Jehovah-Jireh, Gen. xxii, 14, " The Lord will provide " ; -Nissi, Ex. xvii, 15, " The Lord is my banner " ; -Shalom, Jud. vi, 24, " The Lord gives peace "). Twice in translation only (Jehovah-Shammah, Ezek. xlviii, 35, " The Lord is there ; " -Tsidkenu, Jer. xxiii, 6 ; xxxiii, 16, " The Lord our righteousness "). Twice by Shaddai in name of men (Ammi-shaddai, " People of the Almighty," Num. i, 12 ; ii, 25. Zuri shaddai, " My rock is the Almighty," Num. i, 6 ; ii, 12).

To give the exposition of the several pronunciations of the name, and why " incommunicable " we have not room here, but will refer this new correspondent to some literature on the subject which he should read and which will greatly enlighten him.

" What is the Shem-hammephorash," NOTES AND QUERIES, Vol. II, pp. 7-9. " The Staff of Adam, and the Shem-hammephorash," Vol. IV, pp. 345-364.

" The Tetragrammaton," by A. F. Chapman. 8vo. pp. 22 ; Boston, Mass, September, 1872.

" A Contribution to the History of the Lost Word," by Rev. J. F.



Garrison. 8vo. pp. 28 ; Philadelphia, Pa. 1877. (From "Antiquities of Freemasonry," by Geo. F. Fort. Philadelphia, 1877.)

"Recent Theories on the Origin and Nature of the Tetragrammaton," by S. R. Driver. 8vo. pp. 20 ; Oxford, 1885.

"On the Tetragrammaton," in the *Luminous Unity*, pp. 18-45, by Rev. M. R. Miller. 12mo. Philadelphia, 1874.

"The True Pronunciation of the Divine Name Jahvah - Jehovah," by Russell Martineau. 8vo. London.

ELIOT'S INDIAN BIBLE. What is the full title-page of Eliot's Indian Bible ?  
JOHN.

According to Henry A. S. Dearborn who wrote a "Sketch of the Apostle Eliot," it is

"MAMUSSE WUNNEETUPANATAMWE UP-BIBLUM GOD NANEESWE NUKKONE TESTAMENT KAH WONK WUSKU TESTAMENT. NE (QUOSH-KINNUMUK NASHPE WUTTINNE MOH CHRIST NOH ASOOWESIT JOHN ELIOT. CAMBRIDGE SAMUEL GREEN KAH MARMADUKE JOHNSON. 1663."

"A HAWK AND A HANDSAW." Where does the phrase come from?  
LOGOS.

A passage in Shakespeare's Hamlet seems to allude evidently to the hawk and hoop, or hoopee, of Egypt. Hamlet says, "My uncle-father and aunt-mother are deceived." G. "In what, my dear lord?" Ham. "I am but mad north-north-west: when the wind is southerly, I know a hawk from a handsaw." Thomas Capell, editor of the Oxford edition of Shakespeare, changed "handsaw" to "hernshaw," which renders the passage intelligible. ("Hamlet," Act II, Scenc II.)

THE SMALLEST REPUBLIC, This is not San Marino, nor Andorra, nor Moresnet, but the tiny Republic of Goust, in the Pyrenes, which contains less than one hundred inhabitants, all of whom are Romanists. The sole occupation of these people is the weaving of wool and silk. Their government consists of an assembly of old men called the council. They pay no taxes nor imposts of any kind, and therefore have no need of collectors. They have neither mayor, priest, nor physician. They baptize their children, bury their dead, and perform their marriage ceremonies all beyond the boundaries of the town, or in the neighboring village of Laruns. If any one wishes to marry a wife he must go away from home to find her. Among the peaceful residents of this microscopic republic are several centenarians. No one is really poor, and none are rich. The language which they talk is a mixture of French and Spanish, and their numbers, and manners, have remained unchanged for several centuries.—*Frankfort Times*.

**THE PHŒNIX.** (Vol. VI, pp. 236, 246, 253, 298.) I have been much interested in the fabulous history of the phœnix ; but there is another and more plausible explanation to the story. John Goodridge wrote and published a book, in 1781, entitled :

“ The Phoenix, an Essay ; being an attempt to prove from history and astronomical calculations, that the Comet, which by its approximation to our Earth, occasioned the change made at the Fall, and at the Deluge, is the Real Phoenix of the Ancients.”

This is a duodecimo book of 74 pages, illustrated, divided into seven sections. Sections 1 to 4 are a discussion of comets in general. Sections 5 to 7 give his theory of the comet's appearance at the Fall, at the Deluge, and that it will appear again in its regular visit in 2250, when the great conflagration will take place—the end of this world—and the Millenium will begin. The period of the comet's visit near this mundane sphere is 575, or a trifle less ; this agrees approximately with the age of the phœnix, whose age is generally set at 600 years, though a few say 500 years. From Adam to Noah the comet made three visits, the time being about 1725 years. Chronologists generally assign 1656 years from the creation to the flood. Mr. Goodridge says the comet's period may have been a trifle shorter than now from disturbing influences. Some chronologists make the time more than 1656 years ; Josephus makes it 2256 years ; and the Septuagint makes it 2262 years. Mr. Goodridge finds by records that the comet appeared B. C. 44 ; next, A. D. 531 (according to Leibnitz and Zonarus) ; next, it appeared in 1106 (according to Leibnitz and Hevelius) ; the last appearance was in 1680, when it was observed by Newton, Halley, Flamstead, and other astronomers ; the next appearance will be about 2250, when it will come sufficiently near the earth to cause the great conflagration. The theory is a curious one. G. S. C.

**THE HEBREWS.** From whom do the Hebrews take their name ?  
JOHN L. SAMUEL.

Josephus says (Antiquities, Bk. I, chap. vi, sec. 4) that the son of Arphaxad was Heber, “ from whom they originally called the Jews *Hebrews*.” Abram is the first person called “ the Hebrew,” in King James' version ; the Septuagint is *perates*, and means “ the passenger,” that is, Abram, the passenger, who had lately passed over the river Euphrates. “ The Encyclopædia Britannica ” (Scribners' ed.), article “ Hebrews,” says the word means *crosser*, he who crossed over.

"CLEOPATRA'S SOLILOQUY." Who wrote the poem, "Cleopatra's Soliloquy" ? SARAH E. BURNS.

The author of this passional poem is Mrs. Mary Bayard Clarke, wife of Judge Clarke, of Newberne, N. C. It was written as a "pen-picture" of a painting of the "Star-eyed Egyptian," on exhibition in New Orleans. Her husband would not let her publish it till she was over fifty years of age, when it appeared in the *Galaxy*, April, 1877. The edition of the *Galaxy* was soon exhausted, and a hundred copies of the poem were privately printed by a New York lady and distributed to friends, among whom was Rose Eyting, who was then playing the character of Cleopatra in Chicago. Later the poem was printed in the New York *Sunday Mercury*. It appeared in the *Argonaut* Christmas Annual for 1881, with several other poems devoted to "the glorious sorceress of the Nile." The poem, with a fine tribute to the author, appears in a handsome volume of "Pen Pictures," gathered, written, and published in 1888, by Cynthia Leonard,—dedicated

"To the great throbbing heart of humanity, whether it beat with love and appreciation of all things pertaining to the grandeur of the age, in science, art, literature, or the great attainments in mechanical genius—or the heart that throbs in sympathy for the ills, misfortunes, and intense sufferings that daily increase in our midst ; to this great human heart I dedicate this little effort."

"A BIPED WITHOUT FEATHERS." (Vol. VI, p. 332.) Plato is reputed to have defined *man*, the *anthropos*, as a "biped without feathers." Those who set the story going, also add, that Diogenes, the cynic, plucked a cock and exhibited it at the Akademeia, with the words, "Behold, here is Plato's man." A. WILDER.

SOLUTION TO THE KNIGHT'S TOUR PROBLEM. (Vol. VI. p. 315.)

"As knight upon the checquered board  
From square to square leaps boldly on,  
As fiercely on the Persian horde,  
Down poured the Greeks at Marathon.  
So may each youth who reads this lay,  
Press firmly onward to the fight,  
And through life's long hard battle day,  
Still strike for freedom and the right."

First correct solution received from Miss M. J. McAllister, Manchester, N. H. Second, L. H. Aymé, Chicago, Ill. Third, Mrs. L. T. George, Chicago, Ill. Fourth, M. N. Robinson, Lancaster, Penn. Fifth, John M. Richardson, Daingerfield, Texas.

*Waste - Basket of Words.*

[ From Journal of American Folk-Lore, Vol. II, No. V, 1889. ]

*Alibo*.—In the "Autobiography of Henry Tufts," p. 117 (Dover, N. H., 1807), he says: "To prove an *alibi* (not *alibo*)."  
Does the word "alibo" occur elsewhere?—T. W. Higginson, Cambridge, Mass.

*Briggle*.—To be in an uneasy mental condition, to shift the attention rapidly from one thing to another. "Don't briggle so." In common use in Ohio.—Fanny D. Bergen, Cambridge, Mass.

*Briggly*.—Adjective of the foregoing. Expressive of mental and physical restlessness.

*Coast*.—In confirmation of the conclusion, noted in previous numbers, that this word, in the sense of skipping over the snow on a sled, was originally confined to the local dialect of Boston, it may be mentioned that, as shown by careful inquiries, the term was entirely unknown in Salem, at a distance of sixteen miles on one side, as well as in Plymouth, removed thirty miles on the other.

*Mowkie*.—A louse, as I have heard the word employed in Boston. (E. F. Child, Cambridge, Mass.) Doubtless an old English word, although not found in the glossaries, and connected with the German *Mücke* (English midge), a fly, a gnat. It might be guessed that it once had this signification, and was euphemistically used for louse; in support of which it may be mentioned that at the present day, in rural districts of New England, the term *bug* is so employed,—to say *louse* being considered objectionable and vulgar.

*Pass*.—In New England the ordinary term used to express the throwing and catching of a ball by two or more persons is *pass*. "Let's go out and *pass*." In New York and Pennsylvania the verb is *catch*. "Let's go out and *catch*." The noun also is *catch*.—W. H. Garrison, Philadelphia, Pa.

*Pixilated*.—Lost, bewildered, confused. A local term of Marblehead. For example, when an oarsman has been negligent: "We'll be pixilated 'n' driven on th' rocks an' ye don't wake up." (From the novel "Agnes Surriage," by E. L. Bynner, Boston, 1887, p. 56.) The word, no doubt, is the same as the obsolete English *pixy-led*, that is, misguided by a fairy. *Pixy* is a form of Puck (by derivation meaning simply a little one, a boy; see "Grimm's Mythology"), part of whose business or pleasure, as we read in "Midsummer Night's Dream," is to "Mislead night wanderers, laughing at their harm."

*Roomthy*.—This good old word, of which the dictionaries quote examples from Drayton and Fuller, is used by Judge Sewell. "His (Mr. Edward Taylor's) very roomthy and good new meeting-house." (Diary, Vol. III, p. 319.)—H. W. Haynes, Boston, Mass.

## QUESTIONS.

—O—O—O—

1. Who is the author of, and where found, the following lines?  
A. F. C.

"Bright was the hour  
When Israel's Princes, in their pride and power,  
Knelt in the temple's court, the living flame,  
The accepted sacrifice to all proclaim.  
Brightly the splendor of the Godhead shone,  
In awful glory from his living throne;  
Then bowed was every brow, no human sight  
Could brave the splendor of that flood of light  
That veiled His presence,—and His awful form,  
Whose path the whirlwind is,—whose breath the storm."

2. Are there more than three words in the English language that end with *ealth*? Name'y, health, stealth, and wealth (commonwealth and wealth considered the same).  
LOGOS.

3. What were the names of the three mountains, or hills, from which Boston (Tri-mountain) was formerly called? A lecturer referred to them as Beacon Hill, The Highlands, and Mount Auburn. Was he correct?  
BEACON.

4. Who were the Cabiri mentioned so often by classical authors?  
J. E. B.

5. Is there anywhere published a bibliography of the writings and speeches of Daniel Webster; also, of Charles Sumner, and Theodore Parker?  
COLLECTOR.

6. William Cuninghame author of a work on "Chronology of the Scriptures," 1839, claimed to have discovered a new equation which he called the "Trinal Fraction." It is stated to be as follows:

$$\frac{a+a^2+a^3}{a} = x$$

He states that it is an important factor in the solution of many of the chronological cycles, eras, etc. Will some one explain how, by an example?  
TYRO.

7. Who adopted the spelling of the new State to be *Dakota*? It is well known that Longfellow in his "Hiawatha," and others, have spelled the word *Dacotah*.  
OBSERVER.

8. Why was the Order founded by Loyola called *Jesuits*?  
C.

9. What was the name of the first vessel launched in Massachusetts Bay, and when?  
A. L. F.

10. What is the English of the following epitaph of date 472? X.

LEVITAE CONIVNX PETRONIA FORMA PVDORIS  
HIS MEA DEPONENS SEIBVS OSSA LOCO  
PARCITE VOS LACRIMIS DVLCE CVM CONIVGE NATAE  
VIVENTEMQVE DEO CREDITE FLERE NEFAS.

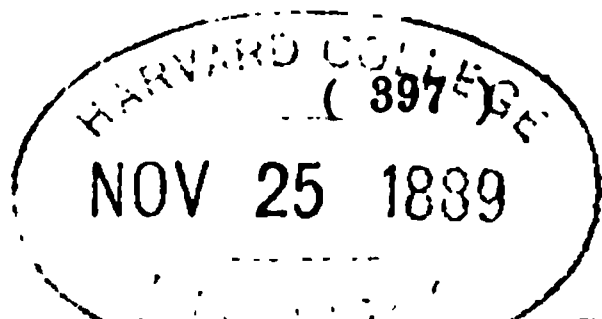












MISCELLANEOUS

# NOTES AND QUERIES,

WITH ANSWERS.

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*"Whatsoever on earth existeth, in a seven it consisteth."* — WUEFFBAIN.

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**TWELVE GRAND POINTS OF MASONRY.** I was received into Masonry on the "five points of fellowship," but recently saw a reference to the "twelve grand points of Masonry." What are these? O.

The old English lectures contain the following passage:

"There are in masonry twelve original points, which form the basis of the system, and comprehend the whole ceremony of initiation. Without the existence of these points, no man ever was, or can be, legally and essentially received into the order. Every person who is made a mason must go through all these twelve forms and ceremonies, not only in the first degree, but in every subsequent one."

Important as our ancient brethren deemed the explanation of these points, the Grand Lodge of England thought proper, in 1813, to leave them out of its ritual, and as they were never introduced into this country, a synopsis of them may be given here, taken from A. G. Mackey's "Lexicon of Freemasonry," p. 506. These twelve points of the ceremony of initiation refer to the twelve tribes of Israel in the following manner:

1. To Reuben was referred the *opening* of the lodge, because he was the first-born of his father.
2. To Simeon was referred the *preparation* of the candidate, because he prepared the instruments of destruction for the slaughter of the Shechemites.
3. To Levi was referred the *report*, because he gave a signal or report to his brothers when they assailed the men of Shechem.
4. To Judah was referred the *entrance* of the candidate, because this tribe first entered the promised land.
5. To Zebulun was referred the *prayer*, because the prayer and

blessing of his father was conferred on him in preference to his brother Issachar.

6. To Issachar was referred the *circumambulation*, because as an indolent and shiftless tribe they required a leader to advance them to an equal elevation with the other tribes.

7. To Dan was referred the ceremony of *advancing* to the altar, as a contrast of the rapid advance of that tribe into idolatry.

8. To Gad was referred the *obligation*, because of the vow of Jephtha, a member of that tribe.

9. To Asher was referred the time the candidate was *instructed*, because Asher, by the fertile soil of its district, was represented by fatness and royal dainties, which was compared to the riches of masonic wisdom which the candidate then received.

10. To Naphtali was referred the *investment*, when the candidate, having received his apron, was declared free, because the tribe of Naphtali had a peculiar freedom attached to them in conformity to the blessing pronounced by Moses.

11. To Joseph was referred the *north-east corner*, because as this reminds us of the most superficial part of masonry so the two half tribes, Ephraim and Manasseh, of which the tribe of Joseph was composed, were accounted more superficial than the rest, inasmuch as they were only the grandsons of the patriarch Jacob.

12. To Benjamin was referred the *closing* of the lodge, because he was the last son of Jacob.

These points, as, before observed, are now obsolete, yet they afford instruction, and will be found worthy of study.

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KORESHAN SCIENCE. (Vol. VI, p. 416.) "Koreschan science is the doctrine of Divine Life in all its twelve degrees. It explains by natural law all the so-called mysteries of nature. It finds a place in the economy of life for every condition of mind and matter. It settles all truth in good, and establishes its doctrines in accordance with strict science. It is a scientific religion. It harmonizes all domains of nature in all their degrees. It finds the source and center of being, the garden of Eden, the tree of life, and the fruit of that tree. It demonstrates in science the difference between life in God and life in man. Its fundamental law is transmutation, the transmuting point being the origin of motion in universal substance. It makes God and man the center and circumference of being, and of all science. It gives the law by which this universal substance transmutes from one degree to another, and from one domain to another, either in evolution or involution. It promulgates every law involved in healing disease, whether of the soul or body. Koreschan science is an

absolute and perfect knowledge of God in all His methods of operations. It is a new science to this age."

Koreshan is from the Hebrew word *Koresh*, the root of which is *Koor*. The word is new and cannot be found in the dictionaries. The literal meaning of the root *koor* is "a furnace, a place of burning, a smelting or refining place." Another degree of meaning is a place into which substances flow to be changed, refined, and converted into other substances and forces. Hence it means the sun, the center of the universe. Koreshan science involves the source of love and wisdom, the transmuting center of the spiritual world, and to know it, give one life and immortality. A very full account of this new science is given in a royal octavo pamphlet on "Koreshan Science," as well as in the *Guiding Star*, the organ of the Koreshan College, Chicago.

MEANING OF "CALIFORNIA." (Vol. VI, 236, 370.) Watson Fell Quinby, M. D., in his pamphlet on "Ophir," says the word California means "beautiful harbor," from *Kalos*, beautiful, and *Phornai*, harbor, the bay being the most beautiful harbor in the world; *phonai* being from *phero*, to bear, and *nai*, ships. He further says Alaska is from *Halaska*, wandering; Oregon from *Oreiganon*, a mountain; Calaveras, *Kalai beros*, house of the cloak; Stanislaus, *Stania laus*, to enjoy a feast; Yosemite, *Uo Semata*, great waterfalls; Truckee, *Trochia*, a wheel road; Mokalomy, *Megaloma*, magnificent; Sonoma, *Sunnomas*, pasturing; Mariposa, *Mara Posa*, great portion.

EPITAPH OF 472. (Vol. VI, p. 396.) The epitaph of A. D. 742, is rendered in English as follows:

"I, Petronia, the wife of a deacon, the type of modesty, lay down my bones in this resting place. Refrain from tears, my sweet daughters and husband, and believe that it is forbidden to weep for one who lives in God."

FIRST VESSEL LAUNCHED IN MASSACHUSETTS BAY. (Vol. VI, p. 396.) This vessel was the "Blessing of the Bay," launched July 4, 1631.

Why are some cats called "tabby cats"? Is it from the woman's name Tabitha?

INQUIRER II.

The term, "Tabby Cat," is derived from Atab, a famous street in Bagdad, inhabited by the manufacturers of silken stuffs called Atabi, or taffety, the waving marking of watered silks resembling a cat's coat.

**THAT "ANCIENT PRAYER."** Where can be found the ancient litany to the Virgin Mary, so much revered in the eighth century among the Irish?  
**SEARCHER.**

The ancient Irish litany was rescued from oblivion by Prof. Eugene O'Curry, who deceased about 1852. It was translated from the Irish tongue into Latin and English, and published with the original Irish text by Richard J. Whyte, New York, 1880. The prayer is as follows :

O Great Mary,	Graceful as the dove,
Mary, greatest of Marys,	Serene like the moon,
Most great of women,	Resplendent like the sun,
Queen of the angels,	Destruction of Eve's disgrace,
Mistress of the heavens,	Regeneration of life,
Womam full and replete with the	Perfection of women,
grace of the Holy Spirit,	Chief of the virgins,
Blessed and most blessed,	Garden enclosed,
Mother of eternal glory,	Fountain sealed,
Mother of the heavenly and the	Mother of God,
earthly Church,	Perpetual virgin,
Mother of love and indulgence,	Holy virgin,
Mother of the golden light,	Prudent virgin,
Honor of the sky,	Serene virgin,
Harbinger of peace,	Chaste virgin,
Gate of heaven,	Temple of the Living God,
Golden casket,	Throne of the Eternal King,
Couch of love and mercy,	Sanctuary of the Holy Spirit,
Temple of the Divinity,	Virgin of the root of Jesse,
Beauty of virgins,	Cedar of Mount Lebanon,
Mistress of the tribes,	Cyprus of Mount Sion,
Fountain of the gardens,	Crimson rose in the land of Jacob,
Cleansing of sins,	Fruitful like the olive,
Washing of souls,	Blooming like the palm,
Mother of orphans,	Glorious sun-bearer,
Breasts of the infants,	Light of Nazareth,
Refuge of the wretched,	Glory of Jerusalem,
Star of the sea,	Beauty of the world,
Handmaid of God,	Noblest born of Christian people,
Mother of Christ,	Queen of life,
Abode of the Godhead,	Ladder of heaven.

**CORK ON A GLASS FULL OF WATER.** (Vol. VI, p. 348.) Mr. Gholson must be joking, as the center of the liquid is *not* the "highest part," and a cork does not "remain in the center" being quickly attracted to the side of the glass.  
**DJAFAR.**

**ORDER OF JESUITS.** (Vol. VI, p. 396.) The Jesuits are so named because they so often repeat the name *Jesus* in their ceremonies and prayers.

**THE HEBREW AND ENGLISH ALPHABET IN THE BIBLE.** (Vol. VI, p. 369.) When you speak of the alphabet all being found in Ezra VII, 21, do you mean the Hebrew or English alphabet? B. G.

We mean the English (except the letter J). The exact number of books, chapters, verses, and letters in the Bible have been noted by different persons, yet they vary sometimes, either from counting, or from typographical errors in copying from one account to another.

Pergignan's manuscript has the following for the Pentateuch :

	Great Sections.	Small sections.	Verses.	Words.	Chapters.
Genesis,	12	43	1,534	20,713	78,100
Exodus,	11	33	1,209	<hr/>	63,467
Leviticus,	10	25	859	11,902	44,989
Numbers,	10	33	12,88	16,707	62,529
Deuteronomy,	11	31	955	16,304	54,892

The Hebrew alphabet is contained in the Old Testament as follows :

Aleph,	.	42,377	Lamed,	.	41,517
Beth,	.	38,218	Mem,	.	77,778
Gimel,	.	29,537	Nun,	.	41,696
Daleth,	.	32,530	Samech,	.	13,680
He,	.	47,554	Ain,	.	20,175
Vau,	.	76,922	Pe,	.	22,725
Zain,	.	22,867	Tzaddi,	.	21,882
Cheth,	.	23,447	Koph,	.	22,972
Teth,	.	11,052	Resh,	.	22,147
Jod,	.	66,420	Shin,	.	32,148
Caph,	.	48,253	Tau,	.	59,345
				Total,	815,240

The Old and New Testament are said to be composed as follows :

	Old Testament.	New Testament.	Total.
Books,	39	27	66
Chapters,	929	260	1,189
Verses,	23,214	7,959	31,173
Words,	592,439	181,253	773,692
Letters,	2,728,100	838,380	3,566,480

Apocrypha : Chapters, 183    Verses, 6,081    Words, 153,185

Number of English letters in the Old Testament, 2,728,100

Number of Hebrew letters in the Old Testament, 815,240

Excess of English letters over Hebrew, 1,912,860

**AUTHORS OF ANONYMOUS BOOKS.** Each decade of the nineteenth century has developed a very philosophical class of literature in untrodden fields of research. Many of these works have appeared anonymously, but why, is best known to the authors of such works. Probably to a certain extent it may be on account of the theoretical domain the works generally traverse. Some of these authors have subsequently thrown off their anonymity, some by force to maintain their rights, others to establish their authorship against plagiarists, while a few are never discovered. The author of "Vestiges of the Natural History of Creation," for a number of years, remained anonymous, but finally has been shown to be Robert Chambers, of Edinburgh.

There are a class of books in my possession, of much interest to me, the authorship of which I have desired to know, and a few of which has been announced. For examples :

"Earth not a Globe," by "Parallax," the founder of Zetetic Astronomy. First edition, 12mo, pp. 16. Birmingham, Eng., 1849. Second edition, 12mo. pp. 430. London, 1873. By *Samuel Briley Rowbotham*. (See N. AND Q., Vol. VI, p. 379.)

"Restoration of the Earth's Lost History. The Past, Present, and Coming State of Our Globe ; the Revolutions through which it Passes from its Birth to its Death or Disolutions. By *John Howard Carey*. 8vo. pp. 134. San Francisco, 1868.

"Theory of Human Progression, and Natural Probability of a Reign of Justice." 12mo. pp. 528. Boston, 1851. By *Patrick Dove*.

"The True Organization of the New Church, as Indicated in the Writings of Emanuel Swedenborg, and Demonstrated by Charles Fourier." 12mo. pp. 454. New York, 1848. By *Charles Julius Hempel*. (See dedication of "Homœopathy, a Theoretic Demonstration with Social Applications." By Marx Edgeworth Lazarus, M. D., New York, 1851.)

"Vestiges of Civilization ; or, the Ætiology of History : Religious, Æsthetical, Political, and Philosophical." 12mo. pp. 416. New York, 1851. By *James O'Connell*. (See article by A. L. Leubuscher, in N. AND Q., Vol. V, p. 33, 1888.)

Now, will some one inform us of the authors of the following anonymous works ?

"Apocatastasis (*Restitution*) ; or, Progress Backward." A New "Tract for the Times." 8vo. pp. 203. Burlington, Vt., 1854.

"An Essay on Transcendentalism." 12mo. pp. 104. Boston, 1842.

"A Statement of the Trinitarian Principle, or Law of Tri-Personality." 8vo. pp. 123. Boston, 1863.

"A Theory of the Universe." 8vo. pp. 91. New York, 1868.

"Beneficence of Design in the Problem of Evil, Vindicated by the Law of Causation in the Physical Construction of Matter." (By "A Journeyman.") Tenth Bridgewater Treatise. 12mo. pp. 213. New York, 1849.

"Civilization : Is its Cause Natural or Supernatural ? An Inquiry by a Wayfarer in Search of the Truth." 8vo. pp. 140. Philadelphia, 1879.

"Great and Grave Questions for American Politicians, with a Topic for America's Statesmen." By "Eboracus." 8vo. pp. 122. New York, 1865.

"Exeter Hall. A Theological Romance. 'What is Truth?'" New York, 1869.

"Flatland, a Romance of Many Dimensions." By "A Square." 12mo. pp. 155. Boston, 1885.

"Manifest Destiny ; or, the World a Republican Structure on the Rock Basis of the Truth in Christ whose Legend is the Universal Prevalence of Freedom, Unity, and Peace on Earth." By "Sosiosch." 8vo. pp. 159. New York, 1869.

"Mind, Life, and Motion ; with the Law of their Relations to Matter." 8vo. pp. 77. New York, 1857.

"Problem of Life and Motion ; An Exile." 8vo. pp. 129. New York, 1859.

"Prometheus in Atlantis ; A Prophecy of the Extinction of the Christian Civilization." 12mo. pp. 318. New York, 1867. .

"Relics from the Wreck of a Former World ; or, Splinters Gathered on the Shores of a Turbulent Planet." Appendix, "Scenery in a Patch of Infinite Space." 8vo. pp. 96. New York, 1847.

"The Mysteries of Isis ; or, The Science of Mythematics." Translated from the original mythic symbols. By "Uniche." 16mo. pp. 312. New York, 1858.

"The Ideal Man ; A Conversation between Two Friends upon the Beautiful, the Good, and the True, as Manifested in Actual Life." By "A Philokalist." 12mo. pp. 160. Boston, 1842.

"The Panidèa ; or, An Omnipresent Reason Considered as the Creative and Sustaining Logos." By "Theoptes." 8vo. pp. 196. Boston, 1846.

"The Position. Elemental and Physical—Normal and Planetary—Moral, Constitutional and National. A Thesis pending the diploma of the order when the issues therein take hold upon the earth." By "Cyrus the Elamite." 8vo. pp. 65. Louisville, Ky., 1879.

"The Problem of American Destiny Solved by Science and History." 12mo. pp. 78. Boston, 1863. Logos.



## Q U E S T I O N S .

1. What is the meaning of the word "Thalassopkletes, quoted on the title-page of a pamphlet on the "Soul and Spirit," published at Manchester, England, in 1879? HOWARD.

2. Freemasons are instructed that Lodges are dedicated to the "Holy Saints John at Jerusalem." Knights Templar are instructed that Commanderies are dedicated to "Saint John of Jerusalem." A. G. Mackey says (Lexicon of Freemasonry, p. 110) that Past Masters' Lodges should be dedicated to the "Saints John." These Johns are John the Baptist, John the Evangelist, and John the Almoner. Give each personage as intended above. Also, explain "Johannite Masonry." NEOPHYTE.

3. Why is the Grand Lodge of Masons of Germany called the "Three Globes"? M. M.

4. Who was the real "Peter Porcupine," who wrote several pamphlets nearly a hundred years ago, one "The Life and Adventures of himself, with a full and fair account of all his Authoring Transactions, being a sure and infallible guide for all enterprising young men, who wish to make a fortune by writing pamphlets"? ANDREW.

5. Was William Tell of Swiss renown, a real or mythic personage? MORTON.

6. Can there be in mathematics *a negative square*? H.

7. The Thomists, we are told by Brande, were the followers of Thomas Aquinas. Why did they take their name from his christian name Thomas, rather than from his surname Aquinas — *Aquinists* or *Aquinasians*? LOGOS.

8. What explanation has been given to the "seven coils of the serpent," which Æneas had engraved on the tomb which contained the remains of his father Anchises? CLASSIC.

9. When and where are the games of *chance* first recorded in history, lots, dice, or lottery, etc. WILL.

10. It is said that some relate that Solon (one of the seven wise men of Greece) added one line in Homer's "catalogue of the ships," in the *Iliad*, Bk. II, l. 674. Solon repeated, "Ajax from Salamis twelve ships commands," and then added, "And ranks his forces with the Athenian power." Pope translates it, "And with the great Athenians join their force." What authority is there that Solon inserted the line credited to him? CRITIC.

11. Who first divided the starry heavens into constellations, and gave the names to the constellations as we now have them? W.

12. Where in the Bible is found the paraphrase, "Thou shall not repeat the secret name of thy God IEUE"? QUARTUS.

# CATALOGUE OF PUBLISHED WORKS OF *Thomas Lake Harris.*

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## HYMNS, SONGS, EPICS, LYRICS, ETC.

Epic of the Starry Heaven. "Hereafter ye shall see heaven open." 12mo. pp. 210. cloth. New York. 1854. Introduction by S. B. Brittan. The poem contains 4,000 lines, and Mr. Brittan says it was communicated in a trance state in 26 hours and 16 minutes.

Hymns for Spiritual Devotion. "And suddenly there was with the Angel a multitude of the heavenly host praising God, and saying, Glory to God in the highest, and on earth peace, good will to men." Parts I and II. 16mo. pp. 293. cloth. New York. 1858.

The Song of Satan. A series of poems, originating with a society of infernal spirits, and received, during temptation-combats. Appendix to the Arcana of Christianity. "Remember now thy Creator in the days of thy youth, while the evil days come not, nor the years draw nigh, when thou shalt say, I have no pleasure in them." 8vo. pp. 107. cloth. New York. 1858.

Regina ; a Song of Many Days. "My sheep know my voice." Dedicated : To Stephanie, doubly endeared by kindness and by worth. 8vo. pp. 229. cloth. London. 1860.

The Great Republic ; a Poem of the Sun. "I saw an angel standing in the sun." Dedication : To the Brotherhood of the New Life in Europe, Asia, and America. Parts I to XII. 12mo. pp. 262. morocco. Gilt. New York and London. 1867.

Lyric of the Morning Land. "In my father's house are many mansions." To the pure in heart. Mr. S. B. Brittan says this poem was communicated in a trance state in January, 1854, the entire time being about 30 hours. It was first published in New York, in 1855. Part I, Pallas ; Part II, Hesperus ; Part III, The Sun. 12mo. pp. 172. cloth. First European edition. Glasgow, 1869.

Lyric of the Golden Age. "And I saw a new earth." Introduction by S. B. Brittan. Mr. Brittan says the poem was communicated in a trance state at different times between December, 1854, and July, 1855, the entire time being 94 hours. It was first published in New York in 1856. 12mo. pp. 304. Parts I to VI. cloth. First European edition. Glasgow. 1870.

## BROTHERHOOD OF THE NEW LIFE.

The Breath of God with Man ; an Essay on the Grounds and Evidences of Universal Religion. " He breathed on them, and saith, 'Receive ye the Holy Ghost.' " Brotherhood of the New Life. 12mo. pp. 184. cloth. New York and London. 1867.

The Golden Child. Songs of Fairyland. Nos. 1 to 52. 8vo. pp. 76.

" Within these leaves we introduce  
The wise and merry little people;  
To whom a seed may hold a use,  
Or flower-bell serve for church and steeple.  
Receive them with a tender joy;  
Embrace them in the heart's affection;  
Man's wintry age they first destroy;  
Then weave his robe of resurrection."

The Golden Child. A daily chronicle. Part Second. Wisdom in Council. Nos. 53 to 66. 8vo. pp. 50. Privately printed. 1878.

Gifts of Innocence (Chapters, 67-68. Songs, 69-85). Nos. 67 to 85. 8vo. pp. 56.

The Concept of the Word. Nos. 97 to 104. 8vo. pp. 75. cloth. Lady's day, January 9th, 1878.

Hymns of the Two-in-One for Bridal Worship in the Kingdom of the New Life. Part First. Nos. 1 to 50. 8vo. pp. 48.

Bridal Hours. (Thirty Songs.) Aestivossa, 1875-1878. 8vo. pp. 60. Fountain Grove, January, 1878.

The Lord : The Two-in-One ; Declared, Manifested, and Glorified. This volume was began about February 7, and finished March 4, 1878, for the Brotherhood of the New Life. 8vo. pp. 148. Privately printed. Fountain Grove. 1878.

The Wedding Guest. Jesus - in - Yessa. Printed and published for the Brotherhood of the New Life. 8vo. pp. 108. Fountain Grove, Santa Rosa, California. 1878.

A Voice from Heaven. 8vo. pp. 66. Fountain Grove. 1879. " Behold, the tabernacle of God with men ; and he will dwell with them ; and they shall be his people ; and God himself shall be with them ; their God. And God shall wipe away all tears from their eyes ; and there shall be no more death, neither sorrow, nor crying ; neither shall there be any more pain ; for the former things are passed away."

The Holy City and the Light Therein. Paragraphs 1 to 205 were written in July and August, 1879. Hymns of Man, Nos. 1 to XII, and paragraphs 206 to 624 were written in 1880. 8vo. pp. 229. Privately printed. 1880.

The Luminous Life. Dedication : To the beloved, faithful in a affliction. 8vo. pp. 5-128. Autumn, 1882.

Esoteric Science in Human History. The Wisdom of the Adepts. "In Nature's infinite book of secrecy, a little I have read." 8vo. pp. xxxvi+527. cloth. Privately printed. Fountain Grove. 1884.

Star-Flowers ; a Poem of the Woman's Mystery. Vol. I, pp. 197, Canto First, 271 stanzas. Vol. II, pp. 122, Canto Second, 124 stanzas. Vol. III, pp. 125, Canto Third, 288 stanzas. Vol. IV, pp. 121, Canto Fourth, 197 stanzas. Vol. V, pp. 116, Canto Fifth, 243 stanzas. 8vo. Total pp. 681. cloth. Privately printed. Fountain Grove. 1886.

#### ARCANA.

The Wisdom of Angels. Part I, Chapters I to IX, Section 1 to 33. 12mo. pp. 218. cloth. New York. 1857.

Arcana of Christianity ; an Unfolding of the Celestial Sense of the Divine Word. Part First. Vol. I. Genesis — Chapter 1st. "And God said, Let there be Light." 8vo. pp. 496 + Appendix LXXXVII. cloth. New York. 1868. "This volume was dictated in the city of New York during the months of October and November, 1857."

Arcana of Christianity ; an Unfolding of the Celestial Sense of the Divine Word. Part Third. Vol. I. The Apocalypse. "The time is at hand." Brotherhood of the New Life. New York and London. 8vo. pp. 488. cloth. 1867.

The Conjugal Sisterhood in the New Life. (Extracted from the "Arcana of Christianity — The Apocalypse," Vol. I.) 12mo. pp. 12.

#### SERMONS.

Recognition of Friends in Heaven. A sermon preached in Mechanics' Institution, Manchester, Sunday evening, October 16, 1859. 12mo. pp. 21. London. 1860.

Juvenile Depravity and Crime in our City. A sermon preached in Stuyvesant Institute, New York, Sunday morning, January 13, 1850. 8vo. pp. 13. New York. 1850.

1. Modern Spiritualism, with appendix ; 2. Christ Incarnate ; 3. Liberty and Progress ; 4. Heart Wants of London. Sermons preached in Store-Street Music Hall, London. 16mo. pp. 72. London, 1860.

1. Modern Spiritualism, with appendix ; 2. Heart Wants of London ; 3. Christ Incarnate ; 4. Liberty and Progress ; 5. Probable Grounds of Christian Union ; 6. The New Church, its Spirit, Scope, and Mission. Discourses preached in England. 16mo. pp. 164. cloth. New York. 1860.

The New Jerusalem, the Crown of Churches and the Glory of the World. Preached in the Mechanics' Hall, Nottingham, Wednesday, March 14, 1860. 12mo. pp. 47. London. 1860.

Moses an Example for Present Imitation. A sermon preached in Marylebone Institute, London, Sunday evening, June 10, 1860. 8vo. pp. 22. Manchester. 1860.

**Truth and Life in Jesus.** Sermons preached in Mechanics' Institution, Manchester, October, November, and December, 1859: 1. Love; 2. Divine Charity; 3. Philosophy of Decay; 4. Recognition of Friends in Heaven; 5. Last Words of Jesus; 6. the Ideal and the Actual; 7. Christian Pilgrim's Progress; 8. Peril and Safety in the Path of Life; 9. Relation of Faith and Charity; 10. Our Future. 16mo. pp. 200. cloth. New York. 1860.

**Modern Spiritualism; its Truths and its Errors.** A sermon preached in Marylebone Institute, London, Sunday morning, January 15, 1860. 12mo. pp. 39; appendix: Mediumship in its connection with the two-fold life of man. 12mo. pp. 9. New York. 1860.

**Revolutions that Precede the Millennium.** A sermon preached in Marylebone Institute, London, Sunday morning, February 12, 1860. 12mo, pp. 16. London. 1860.

**Aims and Issues of the New Church; pp. 16.** The Mission of the New Church, and how it is to be accomplished; pp. 24. 12mo. Glasgow. 1863.

#### PUBLICATIONS ON THE NEW LIFE.

**The Herald of Light** A Monthly Journal of the Lord's New Church. Began May, 1857. Vols I to VI. 1857-1861. 8vo.

"The New Time." In cyclostyle manuscript. Quarto. pp. 8. Glasgow, May, 1887. Containing "A Hymn of the Battle," and "Overture," from Regina, a song of Many Days, by T. L. H. Published by John Thomson, Glasgow.

"The Univercoelum Illustrated." Vol. I, Nos. 1, 2, and 3. May 1, June 1, and 20, 1883. "To thee and thine, Thy will Most High God, be done." This journal contains chapters from "The Wedding Guest," and "The Lord: The Two-in-One." Published by N. A. T. Brown, San Francisco, Cal.

"Life: The Fundamental Principle of all Phenomena." A lecture by Arther A. Cuthbert. Printed for private circulation. 8vo. pp. 30. Glasgow. 1887. Designed to enlighten those who would know the path that leads the soul upward, and for the Brotherhood of the New Life.

#### *Wanted—The following Works by T. L. Harris.*

The Golden Child. Part iv. (Containing sections Nos. 86 to 96.)

Sermons on the Millennium. (Containing twelve discourses.)

Miscellaneous Sermons. Cloth. 16mo.

First Book of the New Church.

First Book of the Christian Religion. 24mo. pp. 175.

Power and Glory of the Church of Christ. 16mo. pp. 37.

The New Church seen in its Doctrine of Regeneration. 16mo. pp. 24.

The Herald of Light. *Want.* — Vol. I. Nos. 1, 3, 5, 6, 7, 8, 9, 10, 11, 12. Vol. III. Nos. 1, 2, 3, 4, 5, 6. Vol. IV. Nos. 1, 2, 3, 4, 5, 6. Vol. V. Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9. Vol. VI. Nos. 1, 2, 3, 4, 5, 6.

S. C. GOULD, Manchester, N. H.

## QUOTATIONS IN VOLUMES I TO VI.

- A Christian is of brightness, not of night.* vi, 364.  
*A glory and a hope to all that isle.* i, 95.  
*A hungry ass placed between two measures of oats.* i, 97; iii, 45.  
*A King can kill, a king can save.* vi, 305.  
*A nation shall be born in a day.* iv, 385.  
*A philosopher resteth not.* vi, 333.  
*Ad Beatricem in cælis.* i, 124.  
*Aeneas hæc de Danaïs victoribus arma.* ii, 386.  
*After life's fitful fever he sleeps well.* ii, 355.  
*Ajax from Salamis twelve ships commands.* vi, 404.  
*All mankind loves a lover.* iv, 299.  
*All things are double, one against another.* i, 24, 58; v, 133.  
*All things began in order.* Preface. Vol. vi.  
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{ A curséd fiend brought death, disease, and pain, }	vi, back of
{ A blesséd friend brought breath and ease again. }	title-page
All things are double, one against another.	v, 133
A philosopher retest not, unless he have the center of a thing.	vi, 333
A quaint and curious volume of forgotten lore.	i, back of title-page
{ Attempt the end, and never stand to doubt ; }	ii, 414
{ Nothing's so hard but search will find it out. }	ii, 593
Be careful to observe the Truth in all things.	iv, 365
Be swift to hear, slow to speak, slow to anger.	iv, 223
Blesséd is he who is conversant in these good things.	ii, 481
Daylight and Truth meet us with a clear dawn.	ii, 378
Defer not till to-morrow to be wise.	cover v, (99-132), 123
Diruit, ædificat, mutat quadrata rotundis.	ii, title-page
Emerson said that Goethe said that Plato said CULTURE.	iv, 271
Error belongs to the libraries, Truth to the human mind.	iii, 157
Every human being is a center of the universe.	ii, 361
Gather up the fragments, that nothing be lost.	v, 149
Geometrical equality can do great things, among gods and men.	vi, 365
God hath spoken once ; two-fold is what I heard.	iii, 61
God is a circle whose circumference is everywhere, and whose center is nowhere to be found.	v, title-page
God perpetually geometrizes.	iv, cover, 1887
Go on, and the Light will come to you.	iii, 141
Give me a place to stand and I will move the world.	vi, 349
Heaven is one ; how can there be more than one God there ?	the word <i>impossible</i> . v, 57
He is a rash man, who, outside of pure mathematics, pronounces	He who lived long ago, in the morning of the world, when earth was nearer heaven than now. v, 73
He who knows himself, knows his own Creator.	vi, 285
History is philosophy teaching by example.	ii, 341
How can I think each separate, and all one ?	iii, 109
How oft we lay the volume down to ask.	ii, 336
Humanity is but a man who lives perpetually and learns con- tinually.	iv, 397
I cannot tell how the truth may be.	ii, 368
If Jupiter were to speak. he would speak as Plato did.	iv, 427
I pause for a reply.	i, 102
It is more blesséd to give than to receive.	iv, 223
I think, therefore, I am is the first and most certain Truth in philosophy.	ii, 545
It neither speaks nor hides, but signifies.	vi, title-page
King, law, light, leader. Rex, lex, lux, dux.	i, facing 1
KNOW THYSELF descended from Heaven.	iii, 1

Language, rhetoric, logic, arithmetic, music, geometry, astronomy.	v, back of title-pages
Learn to know all; but keep thyself unknown.	iii. 29
Leave no stone unturned.	ii, 345
Let no one ignorant of geometry enter here.	iii, 125
Lingua, tropus, ratio, numerus, tonus, angulus, astra.	v, back of title-page
Man is the first dialogue that Nature held with God.	v, 1
Multæ terricōlis linguæ, cœlestibus una.	iii, and iv, title-page
{ Multa rogare ; rogata tenere ; retenta docere ; { Hæc tria discipulum faciunt superare magistrum. }	i, 10
Nothing is beautiful but the Truth.	ii, 609
Nothing is lost, but all transmutes and becomes.	v, 197
Once more, search with me.	ii, 363
One Truth is clear, whatever is, is right.	ii, 657
Plato, thou reasonest well.	i, 185
{ Quos anguis tristi diro cum vulnere stravit, { Hos sanguis Christi miro tum munere lavit. }	vi, back of title-page
Rex, lex, lux, dux. King, law, light, leader.	i, facing 1
Rich is that universal self whom thous worshippingest as the soul.	v, 25
{ Seven hours to law, to soothing slumber seven, { Ten to the world alot, and all to heaven. }	vi, back of title-page
Stand out from between me and the sun.	vi, 237
The cosmos is the champion of the just.	iii, 189
The great ocean of Truth lay all undiscovered before me.	iv, 301
The inhabitants of earth have many tongues, those of heaven but one.	iii, and iv, title-page
The laws of nature are the mathematical thoughts of God.	v, 165
The mathematical intellect is the criterion of Truth.	ii, 641
There is abundance of knowledge, yet but little Truth known.	ii, 577
There is a nearer wap to Heaven than Homer's chain.	v, 181
{ There are more things in heaven and earth, Horatio, { Than are dreamt of in your philosophy. }	ii, back of title-page
There is no religion higher than Truth.	ii, 449
There's a divinity that shapes our ends.	vi, 253
The search after Truth is admiration.	iv, 255
The soul has three vehicles : 1 etherial ; 2 aerial , 3 terrestrial.	vi, 269
The time is born for Enoch to speak, and Elias to work again.	vi, 317
The time that bears no fruit deserves no name.	iv, 381
The universe <sup>1</sup> is but a mean between two extremes.	iii, 77
The whole earth is the brave man's country.	iv, 317
They are never alone who are accompanied with noble thoughts.	iv, 333
Think on these things.	i, title-page
This is the way to Light.	iii, 17
{ Those who have felt the serpent's venomd wound, { In Christ's miraculous blood have healing found. }	vi, back of title-page
Thou art an emanation of the Eternal Mind.	ii, 561
Thou seed of a Divine Mind art sprung from Hercules.	vi, 301

{ 'Tis greatly wise to talk with our past hours, }	ii, 408
{ And ask them what report ? }	
Truth always has the vantage ground.	ii, 433
Truth crushed to earth shall rise again.	ii, 369
Truth for authority, and not authority for Truth.	ii, 497
Truth is always strange, stranger than fiction.	ii, 353
Truth is established by scrutiny and deliberation.	ii, 625
Truth is from Heaven.	ii, 529
Truth is heavy ; few, therefore, can bear it.	ii, 513
Truth is great and mighty above all things.	ii, 401
Truth is the body of God, as Light is his shadow.	ii, 337
Truth is the music of Heaven.	ii, 465
Truth is the speech of inwood purity.	ii, 417
Truth, like a torch, the more it's shook it shines.	ii, 321
Truth must be sought for at the bottom of the well.	ii, 385
Whatsoever on earth existeth, in a seven it consisteth.	vi, 397
What's done we partly may compute.	ii, 352
When Adam was made, the ancient worlds were called forth again.	v, 41
When found, make a note of.	i, 3
Who can travel from Dan to Beersheba, and cry, 'Tis all barren ?	ii, 384
Who knows not Circe, the daughter of the Sun.	vi, 381
Who offends against heaven has none to whom he can pray.	v, 89
Who thinks most, feels the noblest, acts the best.	ii, 488
Yew, those who know virtue are few.	vi, 221

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Periodicals.

5<sup>th</sup>  
Sunday.

